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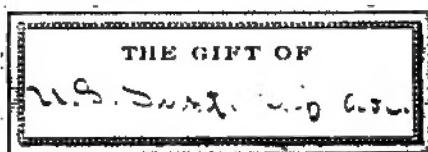
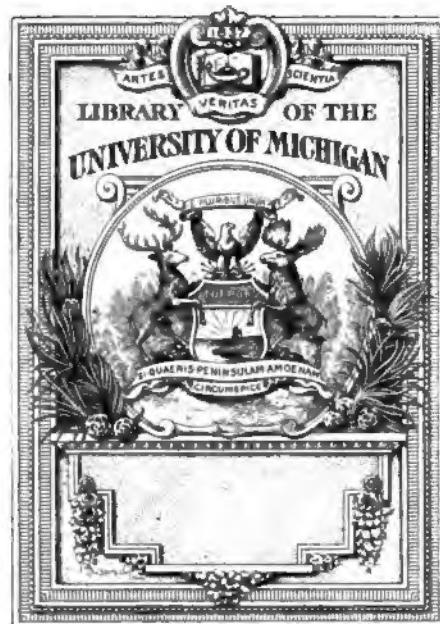
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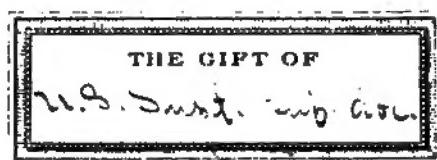
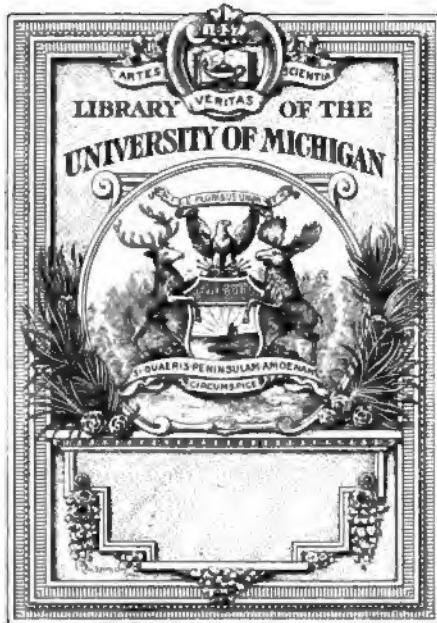
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DEPARTMENT OF THE INTERIOR :: BUREAU OF EDUCATION

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# THE CONTINUATION SCHOOL IN THE UNITED STATES

BY ARTHUR J. JONES

Fellow in Education, Teachers College, Columbia University



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1907



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## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,  
*Washington, May 25, 1907.*

SIR: I have the honor to transmit herewith a monograph entitled "The Continuation School in the United States," by Mr. Arthur J. Jones, and to recommend that it be published as an issue of the Bulletin of the Bureau of Education. This study, as originally prepared, was accepted in partial satisfaction of the requirements for the degree of doctor of philosophy at Columbia University. The subject of which it treats is one of wide educational interest, and it presents a greater body of well-organized and recent information touching this subject than is accessible elsewhere.

I have previously expressed the conviction that the Republic needs a body of citizens no one of whom shall have been wholly lacking in systematic and fairly continuous educational training up to the age of the first exercise of the electoral franchise. That is, in order that the members of our democracy may fitly discharge the full duty of citizenship, in our rapidly changing society, no year of life up to the age of 21 can safely be left bare of any provision for schooling. For those who can continue to devote the later years of this period chiefly to education, such provision is found in high schools, technical and professional schools, and colleges. But what provision shall be made for those who must devote these years of their lives chiefly to the earning of a livelihood, and for that large number of boys and girls who leave school, for whatever reason, even before the completion of the elementary course of study? This monograph shows with some fullness what has already been done for the schooling of such youth. It gives some indication of what may be done in this direction. But it shows, too, how inadequate is the pioneer provision which has hitherto been made in this field.

Very respectfully,

ELMER ELLSWORTH BROWN,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.



# THE CONTINUATION SCHOOL IN THE UNITED STATES.

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By ARTHUR J. JONES.

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## I. INTRODUCTION.

The term "continuation school," while commonly used in England for some time, has not been generally employed in this country and may need some further explanation. As used in this bulletin, it refers to any type of school which offers to people while they are at work opportunity for further education and training. It thus presupposes educational training of some kind, and continues but does not necessarily repeat the work of the regular school. It is supplementary to the work of the regular school in the sense that it is additional to it, and is supplementary to the training which the individual is receiving in his occupation, in the sense that it aims to give him that which he can not receive in his daily work. The term "supplementary school" is, however, used in such a vague way at present that the term "continuation school" seems preferable.

This work was undertaken at the suggestion of Dean James E. Russell, of Teachers College, Columbia University, after a preliminary study of the German Fortbildungsschulen had been made. So little systematic work has been done in this direction in the United States that it seemed well worth while to make a study of the situation as it is here, and a comparison of the means employed in Germany, England, and the United States.

At the very outset the author was greatly handicapped by lack of data, nor was it possible to secure entirely adequate statistics. It is difficult to obtain definite information concerning the ordinary day schools even after years of effort. In the case of the various types of continuation school, this difficulty is greatly increased. Even the meager data given in school reports for day schools are, in the majority of cases, not given for evening schools. This is due, in large measure, to the fact that the educational authorities conduct evening schools as a side issue, and not as a part of their regular educational system. The need for such work and its great importance are only beginning to be felt.

One thing is brought out clearly—the great need of careful study of the conditions in each community with the object of finding out—(1) to what extent educational agencies reach the young people, how long they remain in school, and, if possible, why they leave; (2) in what kinds of work those who have dropped out of school are engaged, what the actual conditions are under which they are working, and how much useful training they are receiving in their occupations. So far the only important attempt to make such a study is that of the Massachusetts Commission on Industrial and Technical Education. This report is admirable, but can not take the place of a definite study of local conditions even in Massachusetts, and much less in other places. The local conditions in every community should be studied in order to determine the means to be employed in remedying them when necessary. Such a study will reveal many things unsuspected before, and give one the only means to an adequate understanding of the situation. The kind of school suited to one city will not be the kind needed in another, for the conditions vary with each locality. Superintendents and boards of education can well afford to spend the time and money necessary to obtain possession of all the facts in the case.

In the following study an attempt has been made:

1. To show the need of continuation schools. This has been done (*a*) by showing the extent to which boys and girls drop out of school at different ages and grades, and the comparative number in public and private schools after the thirteenth year; (*b*) by showing the extent to which the existing supplementary agencies reach those out of school; and (*c*) by indicating something of the conditions of these young people in their occupations.
2. To describe the agencies employed in Germany and England to meet a similar situation.
3. To describe representative types of continuation school in the United States, and to show what education young people are actually receiving in these schools, how it compares with that received in the day schools in amount, and in the extent to which it meets their needs.
4. To show the place of the continuation school in our educational system and the general purpose of such a school in a democracy.

This is to be regarded as only a preliminary report on the subject, a clearing of the ground, so to speak, and an attempt to indicate the general direction which such an inquiry must take. It is hoped that the study will throw some light on existing conditions, and at least call attention to the need of more complete educational facilities.

## II. STATISTICAL EXHIBIT OF SCHOOL ATTENDANCE AND WITHDRAWAL.

### A. WITHDRAWAL FROM THE PUBLIC SCHOOLS.

As a preliminary to any investigation of continuation schools or their equivalents in the United States, we need data concerning the number of pupils who drop out from the existing schools at different ages and at different stages of advancement in the course.

Direct observation of the forces that eliminate pupils from educational influence, and direct measurement of the number of those eliminated are out of question. Estimates only are possible, and these must be made on the basis of a mass of very complex data. In place of any detailed discussion of the subject of withdrawal, the reader is referred to the rather elaborate study soon to be published by Prof. E. L. Thorndike, of Teachers College, Columbia University. He estimates that of 100 children who enter the public schools of cities of 25,000 or over (excluding colored children in southern cities), and who live till 19, 90 stay till the fourth grade, 81 stay till the fifth grade, 68 stay till the sixth grade, 54 stay till the seventh grade, 40 stay till the last grammar grade (usually the eighth, but sometimes the ninth, and rarely the seventh), 27 stay till the first year of the high school, 17 stay till the second year of the high school, 12 stay till the third year of the high school, 8 stay till the fourth year of the high school.

With respect to age the retention is estimated by Professor Thorndike as follows: 100 till 10 years of age, 98 till 11 years of age, 97 till 12 years of age, 88 till 13 years of age, 70 till 14 years of age, 47 till 15 years of age, 30 till 16 years of age, 16.5 till 17 years of age, 8.6 till 18 years of age.

I estimate the retention to the age of 19 as 4.

The extent to which the schools of different cities retain their pupils at ages above 13 and in the grades above the fifth varies very greatly. For a real appreciation of the extent of withdrawal, the detailed tables of Professor Thorndike's monograph should be examined.

For the present purpose, the essential fact, besides the total amount of withdrawal, is its "course," or relative amount year by year and grade by grade. The proportion of any one age leaving school within a year increases steadily from the twelfth year on, even the percentage dropping out at the legal age limit for free attendance not being so high as the later percentages. In considering withdrawal by grades, it is found that the failure of the high school to retain those whom it gets from the grammar grades is equally

marked. In two respects this increased proportional withdrawal is of educational and social importance:

First, it indicates that the schools in the upper grades fail to meet the enlarged needs and interests of the great majority of the young people to whom it may be reasonably expected that they should minister.

Secondly, it indicates that the greatest proportionate withdrawal, being in the upper grades, is among the brighter children. To be specific: When the last grammar grade is reached, only 40 per cent of the pupils entering school are left. As stated, this 40 per cent represents the brighter element. An elimination of a third of these represents a greater loss to society than does the same numerical loss lower down in the grades. It is likewise true that the most of those eliminated in the higher grades are not so gifted as the very few who stay still longer.

Since the interests of the young are constantly widening as they ascend the grades, it is increasingly difficult for the school to meet their needs. The stronger the pupil the stronger will outside interests appeal to him and attract him away from the pursuit of studies in which he has comparatively little interest. Hence, during this time, among those who will be the first to leave school on any pretext will be many who would, with proper training, become influential leaders in society. But for want of it they are too often subjected to the deadening influence of the treadmill of the factory and the shop and lose all the ambition they once had for improvement.

It may be urged that some, at least, of this withdrawal is due to economic conditions, to indifference in the home, and to other reasons outside of the school. This is true, but the question of the causes of leaving school is a very complicated one, and no one knows very much about it. While poverty may in some cases be one of the causes, it is safe to say that in the majority of cases young people drop out of school because they or their parents prefer that they be elsewhere. Whatever the cause, it is proper that society should demand that this heavy withdrawal be reduced to a minimum; or, if this is found to be impossible, or even perhaps undesirable, that some other means be employed by which the young people not in school may be given the opportunity of continuing their education and training.

#### B. ATTENDANCE AT SCHOOLS OTHER THAN SUPPLEMENTARY.

In treating of withdrawal, it was stated that of the pupils entering school only 70 per cent will remain at the fourteenth year of age, and that from that age onward the elimination is especially rapid.

It is here assumed that it is the duty of the public schools to provide in some way for all children up to the age of 14. It is a gener-

ally accepted principle, as indicated by the compulsory education laws of the various States, that up to the age of 14 the State should not only offer the opportunity for education to all, but, in addition, see that they get it. After the age of 14, it is generally conceded, the State should offer opportunity for further education to all who can profit by it; but it is by no means generally held that compulsion should be used in seeing that all take advantage of it. The State does offer such opportunity in its public high schools, but this opportunity is taken advantage of by a comparatively small class.

In discussing an enlargement of the opportunity for educational training beyond the age of 14, the first point that must be determined is how far existing educational agencies are operative; to what extent young people are taking advantage of the opportunities offered, and in what kind of schools they are enrolled. The following study will endeavor to throw some light on this point.

It is manifestly impossible to secure accurate data on this subject from all the cities of the United States. Accordingly the following plan was adopted. The United States was divided into four parts—Eastern, Western, Southern, and Central—and the relative number of cities of 30,000 inhabitants and above was determined for each division. Cities of 30,000 and above were alone considered, because the problem of continuation schools does not become so marked in cities smaller than these. Thirty cities were chosen at random from the list, each section receiving its proportionate number. The choice seemed in an unusual degree to represent the country as a whole, with its varying types of industry.

All the printed information in regard to the number of pupils in the public and the private schools was carefully analyzed. In addition, printed blanks were sent out to each of the cities where such printed information was not available. In these blanks the following information was called for:

1. Estimated population of the city, by age and sex, for years of age 13 to 20, in 1903, 1904, and 1905.
2. Pupils in the public day schools, by age and sex, from 13 to 20 years old.
3. Children not in schools of any kind, by age and sex.
4. Number 13 to 21 years of age in private schools and colleges.

The information called for in regard to evening schools was:

1. The enrollment in 1903, 1904, and 1905, by age and sex, for years of age 13 to 20, in elementary, high, drawing, cooking, and industrial classes.
2. Time of instruction: (a) Hours per evening, (b) evenings per week, (c) weeks per year.
3. Qualifications for admission.
4. Teachers, by sex.
5. Cost of evening schools, classed under: (a) Teaching and supervision, (b) printing and advertising, (c) supplies, (d) text-books, (e) fuel and light, (f) janitor, (g) miscellaneous.

6. The superintendents were asked to underscore the departments of instruction tried in their schools, and number 1, 2, 3, etc., in order of preference, those of the following which they thought most important: (1) Elementary, (2) high, (3) trade and industrial, (4) drawing, (5) cooking.

The replies from these cities were not general enough nor complete enough to warrant any final conclusions. Very few superintendents had the data asked for, and most of those who had them were not able to devote the necessary time to compile them from the records. In general, it has been found, with these as with other statistics, that unless the information is already in the written reports it is seldom possible to obtain it. From the printed reports and from such data as were sent in reply to the blanks sufficient information was obtained from 16 cities to warrant fairly definite conclusions.

#### I. PUBLIC DAY SCHOOLS.

The immediate question which we have to consider is, How far do the schools in the cities selected reach the children from the age of 14 to that of 20? We will examine first the distribution of the pupils between these ages who are actually in school. Table I (p. 13) shows the relative number at each age in the public day schools of the 16 cities. This table is arranged by groups for various age limits. It would read as follows: In Camden, of the pupils in the public day schools between the ages of 14 and 20, 49 per cent are 14 years old, 27 per cent are 15 years old, 13.5 per cent are 16 years old, 6 per cent are 17 years old, 3.5 per cent are 18 years old, 0.7 per cent are 19 years old, and 0.3 per cent are 20 years old. The next group takes the pupils between the ages of 15 and 20, and so on to the last group, which shows that, of the pupils 19 and 20 years old, 73 per cent are 19 years old and 27 per cent are 20 years old.

Taking the group of children from 14 to 20 years of age, we see a striking variability. Portland, Me., has the lowest per cent of pupils 14 years old—30, and New Orleans the highest—52. This means that in New Orleans over half the pupils in the public schools between the ages given are 14 years old, showing a failure on the part of the public schools to reach any considerable number after they are 14 years old. In Portland, on the contrary, there are nearly as many 15-year-olds in school as 14-year-olds and 81 per cent are between the ages of 14 and 16. All show strikingly that between the ages 17 and 20 very few proportionately are in school. Spokane has the largest percentage between these ages—26, while Jersey City has the lowest—7.3. This decrease in the proportion of those in school becomes much more marked the greater the age, as would be natural. Grand Rapids has 5 per cent of its pupils 14 to 20 years old between the ages of 19 and 20, while Jersey City has only 1.3 per cent. Again, considering

the 20-year-olds, the range is from 0.3 per cent in Jersey City and Camden to 2 per cent in Grand Rapids. Considering the medians of this group, we notice a fairly steady decline during the years 14, 15, and 16. Between 16 and 17, however, there is a sudden drop of nearly 50 per cent, from 17.5 per cent at 16 to 9 per cent at 17, and the drop between the eighteenth and nineteenth year is more marked still, being from 5 per cent to 2 per cent, or 60 per cent. This drop is also seen clearly in all the other groups. It is the most marked of any.

Some of those from 18 to 20 are not in school because they have graduated, but the fact remains that they are *not in school* whether graduates or not. The present question is, How far does the public day school reach the young people between the ages of 14 and 20? If some few have passed through the course offered and are not in school, it still remains true that the State does not provide opportunity for their education during these ages in day schools. It may well be true that those who have graduated from the high school are the very ones who would give greatest returns for further educational opportunity. Considering the question in this light, we see that a very small part of the total number of pupils between the ages of 14 and 20 are in school at the ages of 19 and 20—only 3 per cent. Again, of 100 pupils in school who are between the ages of 15 and 20, 95 per cent are 18 years old or younger; in the next group, 92.5 per cent are from 16 to 18 years old; in the group of 17 to 20 year-olds, those 17 and 18 constitute 85 per cent of the whole number; and the 18-year-olds are 61 per cent of the 18, 19, and 20 year-olds in school. In all the cities the 18-year-olds constitute more than one-half of the enrollment of the 18, 19, and 20 year-olds.

TABLE I.—*Distribution of pupils between certain age limits in public schools, expressed in percentages of total number between ages indicated.*

City.	Between 14 and 20 years of age							Between 15 and 20 years of age						
	14.	15.	16.	17.	18.	19.	20.	15.	16.	17.	18.	19.	20.	
1. Camden, N. J. ....	40.0	27.0	13.5	6.0	3.5	0.7	0.3	53.0	26.5	12.0	7.0	1.0	0.5	
2. Chester, Pa. ....	42.0	25.0	16.0	9.0	5.0	2.0	1.0	44.0	27.0	15.0	8.0	4.0	2.0	
3. Chicago, Ill. ....	40.0	28.0	17.0	9.0	5.0	2.0	1.0	44.5	28.0	15.0	8.0	3.0	1.5	
4. Columbus, Ohio. ....	37.0	28.0	18.0	11.0	6.0	2.0	1.0	41.5	24.0	17.5	8.0	3.0	2.0	
5. Grand Rapids, Mich. ....	35.0	29.0	17.0	9.0	5.0	3.0	2.0	44.0	26.0	13.0	9.0	6.0	3.0	
6. Jersey City, N. J. ....	50.2	31.0	11.5	4.0	2.0	1.0	0.3	42.5	24.0	8.0	4.0	2.0	0.5	
7. Little Rock, Ark. ....	38.0	29.0	17.5	9.0	3.5	2.0	1.0	47.0	29.0	15.0	8.0	2.0	1.0	
8. New Orleans, La. ....	42.0	24.5	18.0	8.0	3.0	1.0	0.5	51.0	27.0	13.0	8.0	2.0	1.0	
9. Newton, Mass. ....	32.0	30.0	18.3	10.2	5.5	2.7	1.3	44.0	27.0	13.0	8.0	4.0	2.0	
10. Omaha, Nebr. ....	38.0	22.0	18.0	9.0	4.0	2.0	1.0	45.0	28.0	15.0	7.0	3.0	2.0	
11. Portland, Me. ....	30.0	27.5	23.5	9.0	7.0	2.0	1.0	39.0	33.0	13.0	10.0	3.5	1.0	
12. St. Louis, Mo. ....	49.5	27.0	13.0	6.0	3.0	1.0	0.5	53.0	26.5	12.0	8.0	2.0	0.5	
13. Spokane, Wash. ....	34.5	20.5	19.0	13.0	9.0	3.0	1.0	31.5	28.0	20.5	14.0	4.0	2.0	
14. Springfield, Mass. ....	35.0	26.0	18.0	11.0	6.0	3.0	1.0	39.5	27.0	16.0	10.0	5.0	2.0	
15. Utica, N. Y. ....	47.0	26.0	18.0	8.0	4.0	1.5	0.5	49.0	24.5	15.0	8.0	2.5	1.0	
16. York, Pa. ....	48.5	25.5	13.5	7.5	3.5	1.0	0.5	50.0	26.5	11.0	7.0	1.5	0.5	
Medians.....	39.0	26.5	17.5	9.0	5.0	2.0	1.0	45.0	27.0	15.0	8.0	3.0	2.0	

## 14      CONTINUATION SCHOOLS IN THE UNITED STATES.

**TABLE I.—Distribution of pupils between certain age limits in public schools, expressed in percentages of total number between ages indicated—Continued.**

City.	Between 16 and 20 years of age.					Between 17 and 20 years of age.					Between 18 and 20 years of age.			Between 19 and 20 years of age.	
	16.	17.	18.	19.	20.	17.	18.	19.	20.	18.	19.	20.	19.	20.	
1. Camden, N. J. ....	56.0	26.0	14.0	3.0	1.0	60.0	23.0	5.0	2.0	41.0	14.0	5.0	73.0	27.0	
2. Chester, Pa. ....	48.5	26.5	14.5	7.0	3.5	51.5	27.8	14.0	7.0	57.0	28.0	15.0	66.0	34.0	
3. Chicago, Ill. ....	61.0	27.0	13.0	6.0	3.0	54.0	28.0	12.0	6.0	61.0	27.0	12.0	69.0	31.0	
4. Columbus, Ohio. ....	48.0	30.0	14.0	5.0	3.0	57.0	27.8	10.0	5.5	64.0	24.0	12.0	66.0	34.0	
5. Grand Rapids, Mich. ....	46.0	24.0	17.0	8.0	5.0	44.0	31.0	16.0	9.0	55.0	28.0	17.0	63.0	37.0	
6. Jersey City, N. J. ....	61.4	21.6	10.8	5.3	1.4	56.0	26.7	13.7	3.6	60.5	31.0	8.5	79.0	21.0	
7. Little Rock, Ark. ....	54.0	28.0	11.0	5.0	2.0	61.5	23.0	10.0	5.5	59.0	27.0	13.0	57.0	33.0	
8. New Orleans, La. ....	65.0	27.0	11.0	5.0	2.0	60.0	25.0	10.0	5.5	61.0	26.0	13.0	64.0	32.0	
9. Newton, Mass. ....	48.2	26.7	14.4	7.2	3.5	56.0	27.8	13.8	6.7	57.4	28.6	14.6	67.3	32.7	
10. Omaha, Nebr. ....	52.0	28.0	18.0	5.0	3.0	57.0	26.0	11.0	6.0	61.0	26.0	18.0	66.0	34.0	
11. Portland, Me. ....	55.0	21.6	16.0	5.6	2.0	48.0	32.6	12.6	4.0	69.0	24.0	7.0	78.0	22.0	
12. St. Louis, Mo. ....	57.0	26.0	12.0	4.0	1.0	60.0	27.5	10.0	2.5	70.0	24.5	5.5	82.0	18.0	
13. Spokane, Wash. ....	41.5	30.0	20.0	5.6	3.0	51.5	34.0	10.0	4.5	70.0	20.0	10.0	69.0	31.0	
14. Springfield, Mass. ....	46.0	27.0	16.0	8.0	4.0	49.0	29.0	15.0	7.0	57.0	30.0	18.0	70.0	30.0	
15. Utica, N. Y. ....	47.5	30.0	15.5	5.0	2.0	56.5	30.0	10.0	8.5	68.0	23.5	8.5	73.0	27.0	
16. York, Pa. ....	62.5	29.5	14.0	3.5	0.5	62.0	30.0	7.0	1.0	77.0	20.0	3.0	90.0	10.0	
Medians ....	51.5	27.0	14.0	5.0	2.5	57.0	28.0	10.0	5.0	41.0	27.0	12.0	69.0	31.0	

This does not show the actual proportion that is under instruction. In order to do this, the ratio of pupils at each age from 14 to 20 to the estimated number of young people 14 years old is given (Tables II and III). That is, disregarding the previous life of the young people and taking them between the ages of 14 and 20, how many of them are actually in the public day schools?

Considerable difficulty was met with at the very beginning of this inquiry. It was hard to find any accurate data on the number of young people 14 years old in the cities studied. Springfield, Mass., is the only one of the cities that gave the estimated number by age. This was given only up to 14 years. Columbus and Grand Rapids gave the estimated number by age groups, 14 to 16 and 16 to 21, which was not definite enough for the present purpose. The only other source is the United States census returns of 1900. Here again we are met with the difficulty that, for the cities, the returns were only for the age groups of 10 to 14, 15 to 19, and 20 to 24. The only data for each age were for the separate States. In the absence of definite statistics, the data by age groups for the cities were distributed according to the age distribution given for the States in which the cities were located. These were then compared with all the available data given in the reports for the individual cities. As far as could be ascertained they agreed very closely, but were nearly always somewhat too large. In the case of the age 14, this was evidently due to the commonly known fact that in all census returns there is an emphasis on the even numbers. However, these statistics were for 1900, while most of those of enrollment of pupils are for later years, 1902 to 1905. Comparing the data of age distribution as above stated with the estimated increase in the population, it was clear that the figures as given represented nearly the actual condition; certainly they were not too high. They were accordingly used in all

except one case—that of Spokane, where this would result in making the enrollment at 14 more than the estimated number of 14-year-olds. In this case the number was increased to compare with the estimated number in the city from 6 to 21, as given in the school reports of 1902 to 1904.

In the table showing the per cent of pupils at each age based on the estimated number of children 14 years old (Table II), it will be seen that from one to five records are taken, the average being used. Two, Spokane and Utica, represent only one record. The variability shown is decidedly marked. In the case of 14-year-old children, New Orleans has only 32.5 per cent in the public schools, while Spokane has 87.2 per cent, a difference of 54.7 per cent. In the 15-year-old column, New Orleans is still the lowest, with 15.4 per cent, while Newton leads with 75.8 per cent, a difference of 60.4 per cent. Coming to the 19-year-old pupils, Camden is lowest with 0.6 per cent, closely followed by St. Louis and New Orleans, with 0.7 per cent. Springfield, Newton, and Grand Rapids are very close together at the head with 7.3, 7, and 6.9 per cent, respectively. St. Louis has only 0.15 per cent of 20-year-old pupils, while Grand Rapids has 4.1 per cent. These variations show how much more nearly the public school system reaches the young in some cities than in others.

Considering the medians, we see that less than half of the young people 15 years old are attending the public day schools, and the proportion decreases very rapidly; at 16 less than one-third, at 17 only about one-sixth are in the public schools. At 18 only 7 per cent, at 19 a little over 3 per cent, and at 20 years just 1.6 per cent are attending public day schools. This certainly shows in a striking manner that the public schools are not taking care of the young people between these ages. The median percentages are represented graphically in diagram 1, p. 16.

TABLE II.—*Enrollment in public elementary and secondary schools at certain years of age, expressed in percentages of whole number of children 14 years old.*

City.	Num- ber of reports used.	Between 14 and 20 years of age.							Percent of average at- tendance on total en- rollment.
		14.	15.	16.	17.	18.	19.	20.	
1. Camden, N.J.....	3	50.0	27.2	13.6	6.3	3.5	0.6	0.25	67
2. Chester, Pa.....	3	80.5	47.9	29.5	16.3	8.7	4.4	2.8	.....
3. Chicago, Ill.....	2	47.0	30.6	19.6	10.3	5.3	2.3	1.0	94
4. Columbus, Ohio.....	4	64.5	45.2	30.8	18.9	9.1	3.4	1.7	82
5. Grand Rapids, Mich.	3	77.7	65.5	37.9	19.4	18.7	6.9	4.1	79
6. Jersey City, N.J.....	3	51.1	31.4	11.6	4.1	2.0	1.0	0.3	71
7. Little Rock, Ark.....	3	77.0	59.0	35.9	18.5	7.0	3.1	1.6	73
8. New Orleans, La.....	2	32.5	15.4	8.1	4.0	1.7	0.7	0.35	71
9. Newton, Mass.....	5	81.0	75.8	46.6	25.8	13.9	7.0	3.4	89
10. Omaha, Nebr.....	2	63.2	45.6	29.0	15.7	7.0	3.0	1.6	78
11. Portland, Me.....	3	74.0	67.5	57.6	22.6	16.8	5.9	1.7	80
12. St. Louis, Mo.....	2	33.3	18.0	9.0	4.2	1.9	0.7	0.15	74
13. Spokane, Wash.....	1	87.2	52.2	47.0	34.0	22.5	6.5	3.0	74
14. Springfield, Mass....	5	77.4	57.0	39.2	30.0	14.0	7.3	3.3	77
15. Utica, N.Y.....	1	74.9	41.8	20.5	12.8	6.6	2.3	0.85	75
16. York, Pa.....	4	67.6	35.8	18.9	10.5	5.1	1.3	0.2	.....
Medians.....		70.8	45.4	29.25	16.0	7.0	3.06	1.6	76

TABLE III.—*Percentage enrollment in public schools, classified into elementary and secondary pupils (estimated).*

	Between 14 and 20 years of age.						
	14.	15.	16.	17.	18.	19.	20.
Elementary .....	61.6	30.0	10.86	1.8	0.4	0.13	0.0
Secondary.....	9.2	15.4	18.39	14.2	6.6	2.92	1.6

EXPLANATION OF TABLES II AND III.

Table II shows the enrollment in public schools between the ages of 14 and 20, expressed as per cent of the estimated number of young people in the city who are 14 years old. For Camden this would read, "The number of pupils 14 years of age in the public schools is 50 per cent of the number of 14-year-olds in the city; \* \* \* the number of 20-year-olds in school is but 0.25 per cent of the number of children 14 years old."

Table III represents, roughly, the percentage enrollment in elementary schools and high schools on the same basis as Table II. These percentages are shown graphically in diagram 1.

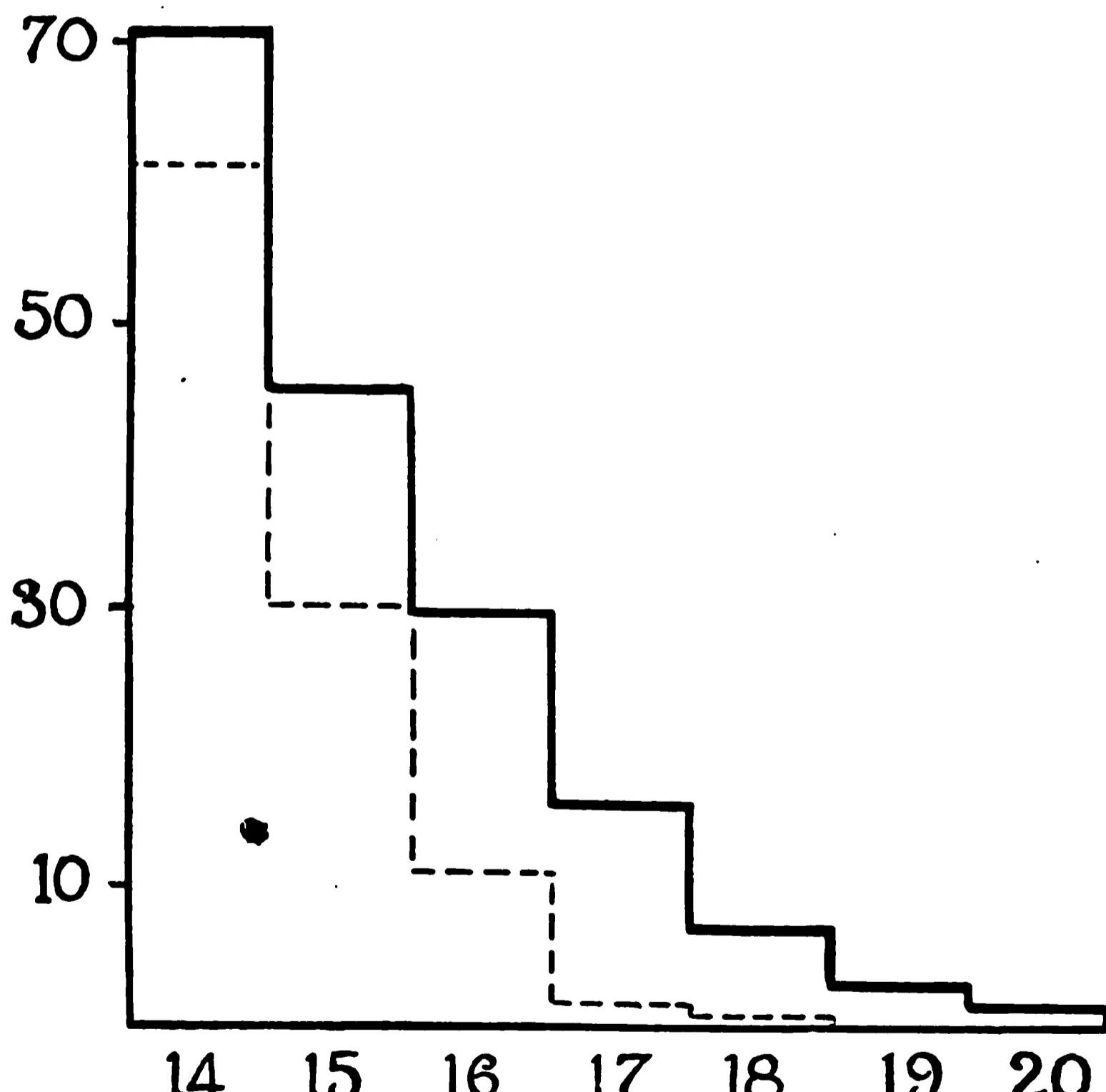


DIAGRAM 1.—Enrollment in public elementary and secondary schools expressed in percentage of number of children 14 years old. The full broken line represents graphically the median percentages of Table II. The dotted broken line marks the division between the elementary and secondary enrollment percentages, as given in Table III.

## II. PRIVATE SCHOOLS.

The next step in the investigation is to determine, if possible, how many of the young people not in the public schools are enrolled in private and parochial schools. Here the difficulty of obtaining statistics is very great. Blanks were sent out to many private schools in the cities studied, but only two schools responded—the MacDuffie School, in Springfield, Mass., and the Balliol School, at Utica. The Emma Willard School, of Troy, N. Y., also sent the number of pupils by age for four years. The only other information in regard to the ages of the pupils in these schools is that found in the reports of the Springfield schools, which give the ages up to and including the fourteenth year. This is, however, a great help, for it gives the parochial schools distinct from other private schools, and, with the addition of the returns from the MacDuffie School, makes it possible to determine very nearly the actual distribution by age of the pupils in these two classes of schools in Springfield. It is much to be regretted that like statistics are not available for all the cities under consideration.

The reports of the United States Commissioner of Education give the estimated number in private and parochial schools for all these cities. For some of the cities estimates have not been made since 1900, and none of them are accurate. The number given for Springfield is the number under 15 years of age as given by the reports of the city superintendent. No doubt the estimates are too high in many cases also. Definite statistics are also given in regard to the various private high schools, academies, etc., for each school reporting, but these, of course, include only a small part of the total number of private schools. The reports of the State superintendents in the various States give data which are somewhat more accurate, but which in nearly all cases are, no doubt, too low. These are a great help in checking up and correcting the estimates given in the reports of the United States Commissioner of Education.

From the data given in the report of 1904 of the United States Commissioner of Education it is possible to estimate the ratio of the enrollment in private high schools, academies, etc., to that in public high schools for the United States as a whole and also for the five subdivisions. In view of the impossibility of obtaining definite statistics for the elementary private schools, the following plan was adopted: The statistics for the total number in private and parochial schools given in the 1904 report of the United States Commissioner of Education were taken as a basis. These were compared with the reports of the State superintendents and, where it seemed necessary, were raised. None of them were decreased. The number in Spring-

field was, of course, taken from the reports of the schools, the number above 14 in the parochial schools being estimated. It was found that in the Springfield private and parochial schools the number under 14 years constituted 83 per cent of the total enrollment, that above being 17 per cent. This number was used in determining the number above 14 in twelve of the sixteen cities. In the other four cities the proportion of those 14 and above was increased to correspond more nearly with the ratio of private to public secondary school pupils as given by the Commissioner of Education. In these cities the proportion was 25 per cent. The number thus found was distributed over the years 14 to 20 according to the distribution of the pupils of the Springfield private and parochial schools taken together. This distribution is shown in Table IV (p. 19), which shows the total number estimated as well as the number between 14 and 20. These estimates are for the year 1904.

Another method of determining the distribution was then used. Taking the per cent of private to public secondary school pupils given by the United States Commissioner for each of the five subdivisions of the United States, the number in the private secondary schools of the cities studied was estimated from the number known to be enrolled in the public high schools. This gives a much smaller number, and represents only the secondary pupils and not those in parochial schools or in other private elementary schools. The number thus found for each city was distributed according to the median distribution of the private schools at hand. This distribution is given below (Table VI), and shows the per cent of private to public secondary pupils, the estimated total number of private secondary pupils, and the distribution of these by ages. All the pupils in these secondary private schools were taken to be 14 or over.

For each of these distributions the ratio of the pupils at each age to the estimated total number of children 14 years old was calculated. The estimated number of children is the same as that used for the public schools. These ratios, expressed as per cents, are given below for each distribution (Tables V and VII).

The most striking difference between these two tables of percentages is seen in the percentages for 14 and 15 years. It is probable that those based on the Springfield distribution are somewhat exaggerated. It is certainly true that other distributions do not make the number 14 to 15 years old large enough. It seems best to combine the results of the two tables, giving two-thirds weight to the percentages based on the Springfield distribution and one-third to those based on the Commissioner's Report and the distribution in the private schools. The percentages resulting from thus weighting the two distributions are given in Table VIII (p. 20), and graphically represented in diagram 2 (p. 21).

It is not asserted that these figures accurately represent the number in private schools in the cities; but they do show fairly well the relative part taken by the private schools, on the whole, in the training of the young people between the ages of 14 and 20. The proportion of private school pupils is so small that the inaccuracy of the figures does not affect the general conclusions. It is also noteworthy that the proportionate part taken by the private schools is decreasing, in some States very markedly so.

It would seem from these figures that the private schools hold their pupils decidedly better than do the public schools, but the difference is probably not nearly so marked as these tables would indicate.

TABLE IV.—*Pupils of private and parochial schools, elementary and secondary, distributed according to the Springfield distribution.*

City.	Total enrollment, all ages, <sup>a</sup>	Between 14 and 20 years of age.						
		14.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.	1,000	53	38	29	21	17	10	1
2. Chester, Pa.	500	26	19	14	11	9	5	1
3. Chicago, Ill.	b 50,000	2,618	1,912	1,436	1,062	850	610	111
4. Columbus, Ohio.	3,988	206	150	113	84	67	40	9
5. Grand Rapids, Mich.	4,450	233	170	128	95	76	45	10
6. Jersey City, N. J.	6,985	365	266	200	148	119	71	14
7. Little Rock, Ark.	c 800	66	48	36	26	21	13	3
8. New Orleans, La.	c 8,000	616	450	338	250	200	120	26
9. Newton, Mass.	600	32	23	17	13	10	6	1
10. Omaha, Nebr.	2,500	131	96	72	53	42	26	6
11. Portland, Me.	2,500	131	96	72	53	42	26	6
12. St. Louis, Mo.	30,000	1,571	1,147	862	638	510	306	60
13. Spokane, Wash.	750	57	42	31	22	19	11	2
14. Springfield, Mass.	1,766	98	68	51	38	30	18	4
15. Utica, N. Y.	8,102	162	118	99	66	53	32	7
16. York, Pa.	d 750	58	42	32	24	19	11	2

<sup>a</sup> Enrollment given by Commissioner of Education.

**b** Enrollment increased according to State report.

<sup>1</sup> Enrollment estimated from number of private secondary students as given by reports of State superintendents.

<sup>a</sup> Enrollment increased according to proportion in South Central States.

TABLE V.—Enrollment in private and parochial schools (*Springfield distribution*), expressed in percentages of total number of children 14 years old.

City.	Between 14 and 20 years of age.						
	14.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.	4.0	2.8	2.2	1.6	1.2	0.8	0.2
2. Chester, Pa.	4.2	3.1	2.3	1.8	1.5	0.8	0.2
3. Chicago, Ill.	8.36	6.0	4.6	3.4	2.7	1.6	0.3
4. Columbus, Ohio	9.4	6.9	5.2	3.8	3.1	1.8	0.4
5. Grand Rapids, Mich.	14.4	10.5	8.0	5.9	4.7	2.8	0.6
6. Jersey City, N. J.	9.0	7.2	5.4	4.0	3.0	1.9	0.4
7. Little Rock, Ark.	12.8	5.3	7.0	5.0	4.1	2.5	0.4
8. New Orleans, La.	11.1	6.1	6.1	4.5	3.6	2.2	0.4
9. Newton, Mass.	6.3	4.5	3.3	2.8	2.0	1.2	0.2
10. Omaha, Nebr.	7.6	5.5	4.2	3.1	2.4	1.4	0.3
11. Portland, Me.	18.3	13.4	10.0	7.4	5.9	3.5	0.8
12. St. Louis, Mo.	14.7	10.7	8.1	6.0	4.9	2.9	0.6
13. Spokane, Wash.	8.8	6.6	4.8	3.5	2.8	1.7	0.3
14. Springfield, Mass.	9.7	7.2	5.3	3.1	2.1	1.9	0.4
15. Utica, N. Y.	16.8	12.2	9.2	6.5	5.5	3.3	0.7
16. York, Pa.	9.1	6.6	5.0	3.8	3.0	1.7	0.3
Medians.	9.8	7.0	5.3	3.9	3.1	1.9	0.4

TABLE VI.—Enrollment in private secondary schools, based on the enrollment in public high schools, as given in the Report of the Commissioner of Education, 1904.

City	Per cent of enroll- ment in private schools.	Total enroll- ment in pri- vate schools.	Distribution by age according to private schools.						
			14.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.....	24.4	91	13	14	16	16	16	12	4
2. Chester, Pa.....	24.4	92	13	14	16	17	16	12	4
3. Chicago, Ill.....	17.0	2,108	295	327	369	379	369	274	96
4. Columbus, Ohio.....	17.0	415	36	54	73	74	73	54	19
5. Grand Rapids, Mich.....	17.0	299	42	46	52	54	52	39	14
6. Jersey City, N. J.....	24.4	144	20	22	25	26	25	19	7
7. Little Rock, Ark.....	57.0	239	33	37	42	43	42	31	11
8. New Orleans, La.....	57.0	590	81	91	108	106	103	77	27
9. Newton, Mass.....	24.4	204	26	32	36	37	36	26	9
10. Omaha, Nebr.....	17.0	256	36	40	45	46	45	33	11
11. Portland, Me.....	24.4	201	28	32	35	36	35	26	9
12. St. Louis, Mo.....	17.0	549	77	85	90	99	96	71	25
13. Spokane, Wash.....	25.7	206	29	32	37	37	37	27	9
14. Springfield, Mass.....	24.4	256	36	40	45	46	45	33	11
15. Utica, N. Y.....	24.4	150	21	23	26	27	26	20	7
16. York, Pa.....	24.4	100	14	16	17	18	17	13	5

TABLE VII.—Enrollment in private secondary schools, as given in the preceding table, expressed in percentages of total number of children 14 years old.

City	Between 14 and 20 years of age.						
	11.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.....	1.6	1.02	1.2	1.2	1.2	0.9	0.3
2. Chester, Pa.....	2.1	2.3	2.6	2.6	2.6	1.9	0.66
3. Chicago, Ill.....	0.9	1.1	1.2	1.2	1.2	0.9	0.3
4. Columbus, Ohio.....	2.6	2.9	3.8	3.4	3.8	2.5	0.9
5. Grand Rapids, Mich.....	2.6	2.8	3.2	3.3	3.2	2.4	0.9
6. Jersey City, N. J.....	0.5	0.6	0.7	0.7	0.7	0.5	0.2
7. Little Rock, Ark.....	4.8	5.4	6.1	6.3	6.1	4.5	1.6
8. New Orleans, La.....	1.5	1.6	1.9	1.9	1.9	1.4	0.5
9. Newton, Mass.....	5.5	6.8	7.1	7.3	7.1	5.2	1.8
10. Omaha, Nebr.....	2.1	2.3	2.6	2.7	2.6	1.9	0.6
11. Portland, Me.....	3.9	4.5	4.9	5.0	4.9	3.6	1.3
12. St. Louis, Mo.....	0.7	0.8	0.9	0.9	0.9	0.7	0.2
13. Spokane, Wash.....	4.5	4.9	5.7	5.7	5.7	4.2	1.4
14. Springfield, Mass.....	3.7	4.2	4.7	4.8	4.7	3.4	1.2
15. Utica, N. Y.....	2.2	2.4	2.7	2.8	2.7	2.1	0.7
16. York, Pa.....	2.2	2.5	2.7	2.8	2.7	2.0	0.8
Medians.....	2.2	2.5	2.7	2.8	2.7	2.1	0.8

TABLE VIII.—Enrollment in private and parochial schools, elementary and secondary, expressed in percentages of total number of children 14 years old.

[Combination of the Springfield distribution with a weight of 2, and that of the Commissioner of Education with a weight of 1.]

City	Between 14 and 20 years of age						
	11.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.....	3.0	2.2	1.9	1.4	1.2	0.8	0.2
2. Chester, Pa.....	3.5	2.8	2.4	2.1	1.9	1.2	0.3
3. Chicago, Ill.....	5.9	4	3.5	2.7	2.2	1.4	0.8
4. Columbus, Ohio.....	7.1	8.9	4.6	3.7	3.2	2.0	0.6
5. Grand Rapids, Mich.....	10.5	9	6.4	5.0	4.2	2.7	0.7
6. Jersey City, N. J.....	6.2	5.0	3.8	2.9	2.2	1.4	0.3
7. Little Rock, Ark.....	10.1	8.0	6.7	5.4	4.8	3.2	0.9
8. New Orleans, La.....	7.9	5.9	4.7	3.6	3.0	1.9	0.4
9. Newton, Mass.....	6.0	5.1	4.6	4.2	3.7	2.5	0.7
10. Omaha, Nebr.....	5.8	4.1	3.7	2.6	2.5	1.6	0.4
11. Portland, Me.....	13.5	10.4	8.3	6.6	5.6	3.5	1.0
12. St. Louis, Mo.....	10.0	7.4	5.7	4.3	3.5	2.2	0.5
13. Spokane, Wash.....	7.4	6.0	5.1	4.1	3.8	2.6	0.7
14. Springfield, Mass.....	7.7	6.2	5.1	4.2	3.6	2.4	0.7
15. Utica, N. Y.....	11.9	8.9	7.0	5.5	4.6	3.0	0.7
16. York, Pa.....	6.8	5.2	4.2	3.5	2.6	1.8	0.5
Medians.....	7.8	6.0	4.9	4.0	3.4	2.1	0.6

## EXPLANATION OF TABLES IV TO VIII.

Table IV gives for certain cities the total enrollment in private and parochial schools as nearly as can be determined from the data at hand. It also shows the age distribution of pupils from 14 to 20 years according to that in Springfield.

Table V shows the same facts as Table IV, expressed as per cent of the total number of children 14 years old in each city.

Table VI shows the estimated enrollment in private secondary schools in the same cities, using as a basis the per cent which the enrollment in private secondary schools in each of the five census divisions of the United States bears to that of the public secondary schools, as given by the Commissioner of Education. This number is distributed over the ages 14 to 20, according to the distribution in the few private schools at hand.

Table VII expresses this distribution as per cent of the total number of 14-year-olds in the city.

Table VIII combines Tables V and VII, giving a weight of 2 to the former and of 1 to the latter.

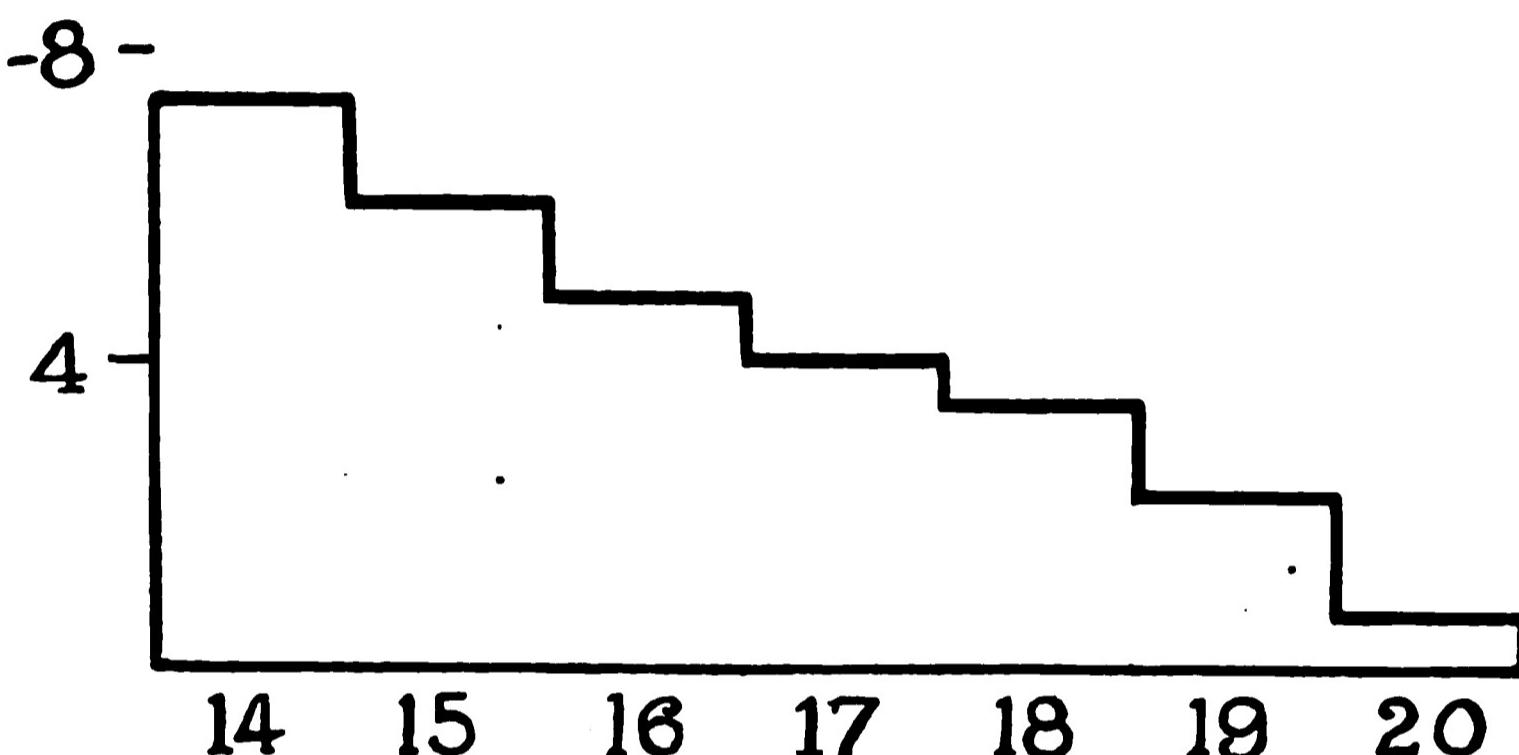


DIAGRAM 2.—Enrollment in private and parochial schools, elementary and secondary, expressed in percentages of total number of children 14 years old, as shown by the median percentages of Table VIII.

## C. SUPPLEMENTARY AGENCIES.

## I. PUBLIC EVENING SCHOOLS.

Something of the difficulty already alluded to was experienced in obtaining statistics of pupils by age for the evening schools. Three cities—Omaha, Camden, and St. Louis—give complete age statistics in their regular reports. Columbus gives them by the age groups 14 to 16, 16 to 21, 21 and over, and Chicago by the groups 12 to 15, 15 to 18, 18 to 21, etc.; so that fairly complete data were obtained from the reports of five cities.

Blanks were sent out to all of the thirty cities selected according to the plan already given and to twenty others. Only six cities responded, and of these three were among the cities studied—York, Utica, and Portland—the latter giving only the totals for the age group 14 to 20. Accurate data were obtained also from Jersey City through the courtesy of Superintendent Snyder, who gave the author access to the school records. Two cities—Spokane and Chester—re-

ported having no evening schools; so that accurate data were obtained from eleven out of the sixteen cities. In addition to this, data have been obtained from four other cities—Erie, Elmira, Newark, and Louisville—which have aided in the distribution. For the remaining cities only the total enrollment in evening schools is obtainable. This has been distributed according to the median distribution of the cities whose data have been given. In New Orleans the age at entrance is 16, and this has been taken into account in distributing the pupils by age. Before making the distribution for the ages 14 to 20 the proportionate number above 20 was taken out in each case.

The following table (Table IX, p. 23) shows the number of pupils at each age and the number 21 and over in the evening schools of the sixteen cities. It is clearly seen that in the evening schools, while there are many 21 and over, yet the great majority are under 21. In point of age of pupils now enrolled these are distinctively schools for young people. The table showing the per cent at each age of the total number between the ages of 14 and 20 is also given (Table X). The table of age distribution here given shows that the modal ages are 15 and 16, while there is a steady decrease above 16. This is seen not only in the medians, but also in the individual cities.

The proportionate number of pupils at each age from 14 to 20, based on the estimated total number of children 14 years old, was then found, as in the case of the public and private schools. In this table (Table XI and Diagram 3) the variability is nearly as striking as in the other cases studied. There is a great difference, not only in the per cents at each age, but also in the ability of the evening schools of certain cities to hold the pupils. Springfield has by far the most effective evening schools, as far as the percentage enrolled is concerned. Utica is also strong in this particular. New Orleans apparently does the least of the cities which maintain evening schools, and admits only at the age of 16. There is no general correspondence shown by these data between the effectiveness of public day schools and that of evening schools, as far as per cent of population enrolled is concerned, as may be seen by the following table.

In determining the rank of each city in enrollment in any class of schools, as shown in this table, the rank for each age from 14 to 20 is first determined, the city having the highest per cent at 14 having first rank, and so on; then these ranks for the several ages, 14 to 20, are added up. This gives the total rankings of the city. The city whose total ranking is numerically the least is placed first.

*Table showing the rank of cities in the enrollment of pupils 14 to 20 years old in various schools.*

Rank.	Public schools.	Private schools.	Evening schools.
1.....	Newton .....	Portland .....	Springfield.
2.....	Spokane .....	Grand Rapids .....	Utica.
3.....	Springfield .....	Spokane .....	Jersey City.
4.....	Grand Rapids .....	Springfield .....	Columbus.
5.....	Portland .....	Little Rock .....	Camden.
6.....	Chester .....	Newton .....	Chicago.
7.....	Little Rock .....	Utica .....	Newton.
8.....	Columbus .....	Columbus .....	St. Louis.
9.....	Omaha .....	Chester .....	Omaha.
10.....	Utica .....	Omaha .....	York.
11.....	Chicago .....	York .....	Grand Rapids.
12.....	York .....	St. Louis .....	Portland.
13.....	Jersey City .....	New Orleans .....	Little Rock.
14.....	Camden .....	Chicago .....	New Orleans.
15.....	St. Louis .....	Jersey City .....	Chester.
16.....	New Orleans .....	Camden .....	Spokane.

Two cities in the upper half in enrollment in public schools have no evening schools—Spokane and Chester. Only three cities are in the upper half of all three columns,—Springfield, Newton, and Columbus.

The most striking thing about the evening school percentages in Table XI is that they are so small. They show that the evening schools reach a comparatively small part of the young people who are not in other schools.

TABLE IX.—*Public evening school enrollment, partially classified by age.*

City.	Num- ber of rec- ords.	Un- der 14.	Between 14 and 20 years of age.							21 and over.
			14.	15.	16.	17.	18.	19.	20.	
1. Camden, N. J. ....	1	21	33	187	160	101	68	52	72	129
2. Chester, Pa. a. ....	2	400	1,507	1,900	2,310	1,686	1,622	1,207	989	6,500
3. Chicago, Ill. ....	2	9	17	14	17	13	12	10	7	42
4. Columbus, Ohio. ....	1	44	53	49	36	29	23	19	63	
5. Grand Rapids, Mich. ....	1	5	318	517	642	339	301	210	50	160
6. Jersey City, N. J. ....	1	7	8	7	5	4	3	3	...	
7. Little Rock, Ark. ....	2	...	...	...	...	...	...	...	...	
8. New Orleans, La. ....	1	...	...	...	77	52	44	35	26	55
9. Newton, Mass. ....	6	...	32	37	38	25	21	16	12	41
10. Omaha, Nebr. ....	3	40	64	67	63	43	37	26	21	148
11. Portland, Me. ....	1	10	17	21	19	14	12	9	7	230
12. St. Louis, Mo. ....	2	830	719	585	353	283	282	196	548	
13. Spokane, Wash. d. ....	...	...	...	...	...	...	...	...	...	
14. Springfield, Mass. ....	5	120	241	238	270	242	227	142	510	
15. Utica, N. Y. ....	1	1	179	206	161	84	68	37	38	176
16. York, Pa. ....	1	...	80	85	20	14	12	13	5	14

a No evening schools.

## 24 CONTINUATION SCHOOLS IN THE UNITED STATES.

**TABLE X.—Percentage distribution of pupils in public evening schools 14 to 20 years of age.**

City.	Between 14 and 20 years of age.						
	14.	15.	16.	17.	18.	19.	20.
1. Camden, N. J.....	5.0	■ 0	24.0	15.0	10.0	8.0	10.0
2. Chester, Pa. <sup>a</sup> .....	18.0	18.0	21.0	15.0	14.0	11.0	8.0
3. Chicago, Ill.....	19.0	15.5	19.0	14.5	13.0	11.0	8.0
4. Columbus, Ohio.....	17.5	21.0	19.5	14.0	11.5	9.0	7.5
5. Grand Rapids, Mich.....	14.0	23.0	24.0	16.0	18.0	9.0	2.0
6. Jersey City, N. J.....	17.5	21.0	19.5	14.0	11.5	9.0	7.5
7. Little Rock, Ark.....	25.0	21.0	18.0	11.0	9.0	9.0	6.0
8. New Orleans, La.....	18.0	21.0	18.0	14.0	12.0	9.0	7.0
9. Newton, Mass.....	20.0	21.0	20.0	13.0	11.5	8.0	6.5
10. Omaha, Nebr.....	17.0	21.5	19.5	14.0	12.0	9.0	7.0
11. Portland, Me.....	25.0	22.0	18.0	11.0	9.0	9.0	4.0
12. St. Louis, Mo.....	7.8	15.7	19.3	17.5	15.8	14.7	9.2
13. Spokane, Wash. <sup>a</sup> .....	23.0	27.0	20.0	11.0	9.0	5.0	5.0
14. Springfield, Mass.....	22.0	25.0	21.0	10.0	9.0	9.0	4.0
Medians.....	17.5	21.0	19.6	14.0	11.5	9.0	7.5

<sup>a</sup> No evening schools.

**TABLE XI.—Enrollment in public evening schools at each age from 14 to 20 years, expressed in percentage of total number of children 14 years old.**

City.	Number of rec- ords.	Between 14 and 20 years of age.						Per cent of average at- tendance on total en- rollment
		14.	15.	16.	17.	18.	19.	
1. Camden, N. J.....	1	2.4	13.7	11.7	7.4	6.0	3.8	5.8
2. Chester, Pa. <sup>a</sup> .....	2	4.5	6.4	7.4	6.4	5.2	3.9	3.0
3. Chicago, Ill.....	2	7.8	6.4	7.8	5.9	5.6	4.6	48
4. Columbus, Ohio.....	2	7.8	6.4	7.8	5.9	5.6	4.6	65
5. Grand Rapids, Mich.....	1	2.7	3.8	3.0	2.2	1.8	1.4	1.2
6. Jersey City, N. J.....	1	8.8	14.0	14.7	9.2	8.2	5.7	30
7. Little Rock, Ark.....	2	1.4	1.6	1.4	1.0	0.8	0.65	0.6
8. New Orleans, La.....	1	0	0	1.4	0.95	0.8	0.6	49
9. Newton, Mass.....	6	6.3	7.3	6.5	5.0	4.2	3.2	2.4
10. Omaha, Nebr.....	3	3.7	8.9	3.6	2.5	2.1	1.6	32
11. Portland, Me.....	1	2.4	2.9	2.6	2.0	1.7	1.3	1.0
12. St. Louis, Mo.....	2	7.8	6.7	5.5	3.3	2.7	2.6	1.8
13. Spokane, Wash. <sup>a</sup> .....	5	12.5	25.0	31.0	28.0	26.1	23.6	14.7
14. Springfield, Mass.....	1	18.5	21.2	16.7	8.7	7.0	5.9	4.0
15. Utica, N. Y.....	1	4.7	5.5	4.6	2.2	1.9	2.0	0.8
16. York, Pa.....	1	—	—	—	—	—	—	—
Medians.....		4.2	8.0	5.1	2.9	2.4	2.3	1.4

<sup>a</sup> No evening schools.

### EXPLANATION OF TABLES IX TO XI.

Table IX gives the total enrollment in the evening schools of certain cities, the pupils between 14 and 20 being distributed by years of age.

Table X gives this distribution expressed as per cent of the total number of pupils in these schools from 14 to 20 years of age.

Table XI expresses the same distribution as per cent of the total number of children 14 years old in the different cities.

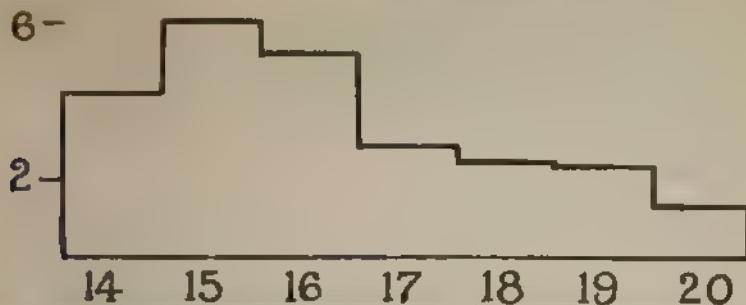


DIAGRAM 3. Enrollment in public evening schools, expressed in percentage of total number of children 14 years old, as shown by the median percentages of Table XI.

#### II. YOUNG MEN'S CHRISTIAN ASSOCIATION CLASSES.

Another general agency that is attempting to reach working people is the Young Men's Christian Association. Very careful reports are made every year by each of its local secretaries to the educational committee. These include, among other points, the total enrollment of persons under instruction; enrollment by subjects, grouped under the following heads: (1) Elementary, (2) high school, (3) commercial, (4) political science, (5) industrial, (6) science, and (7) language and music. The number of teachers is also given and the salaries paid. Since 1904 the statistics for boys, including all 18 years old and younger, have been separate, so that it is possible to ascertain with a fair degree of accuracy the number of young people under 21 enrolled in these classes.

The original reports from all the associations were placed at the disposal of the author by Mr. George B. Hodge, the educational secretary, to whom he is indebted both for this courtesy and for many helpful suggestions.

A further effort was made to secure more accurate data in regard to the age, previous education, and present occupation of each pupil, and subjects pursued. To the educational directors of the associations in nearly 50 cities, including all the 16 cities named in the previous sections of this work, letters were sent, asking whether they would be willing to have their students fill out blanks calling for this information; 16 expressed their willingness to cooperate. To each of these were sent blanks like the following:

1. Name \_\_\_\_\_
2. Age \_\_\_\_\_
3. Studies being pursued...  
Names of studies \_\_\_\_\_  
Hours per week... \_\_\_\_\_
4. Present occupation \_\_\_\_\_
5. Wages—Underline the group within which your present  
WEEKLY wage comes  
\$5 to \$8, \$9 to \$12, \$13 to \$16, \$17 to ...
6. What day school last attended? \_\_\_\_\_  
Age at leaving \_\_\_\_\_ Grade at leaving \_\_\_\_\_

About 2,500 blanks were sent out. The response was not so general as had been hoped, only seven cities returning blanks filled out—Newark, N. J., Seattle, Wash., Omaha, Nebr., Birmingham, Ala., Camden, N. J., Springfield, Mass., and Hartford, Conn. The educational directors seemed to experience difficulty in persuading the men to fill them out, their objection being that it was an attempt to inquire into their private affairs.

From these data it is, of course, not possible to draw any definite conclusions. However, the blanks do show the age distribution in a fairly satisfactory manner. The median age as shown by these is 21, about what we would expect from the other statistics. The only adequate data, then, are found in the reports to the educational committee, where the only division by age is that into the groups 18 and younger and over 18. Taking this as a basis, and calling the enrollment of the 19- and 20-year-olds 20 per cent of the total enrollment, the total number 14 to 20 was distributed, as nearly as possible, according to the mean distribution of the pupils reported by the seven associations. This is at best a very rough method, but it certainly does ample justice to the enrollment between the ages mentioned. The number in any case is so small that it will not greatly affect the result. The total enrollment taken was in every case the largest of those reported for the years 1904, 1905, and 1906. The following table (Table XII) shows the distribution of the pupils 14 to 20 years old in each of the 16 cities.

The next table (Table XIII) shows the percentage at each age, based on the estimated total number of children 14 years old. The percentage in all cases is very small, never reaching 2, and in only three cities does it reach 1. Omaha and New Orleans show the largest per cent, with Spokane not far behind. When the medians are considered, we see how small a proportion of those at each age are reached by means of this agency.

In comparing this enrollment quantitatively with that for evening schools, we must keep in mind that the great majority of the association pupils attend only two classes a week of one hour each, and thus represent a total of two to four hours of work per week as compared with six to eight hours in the evening schools. The quantitative value of the Young Men's Christian Association enrollment should therefore be reduced one-half to put it on an equal footing with that of the evening schools.

TABLE XII.—*Enrollment in Young Men's Christian Association evening classes, partially classified by age.*

City.	Between 14 and 20 years of age.							Over 20.
	14.	15.	16.	17.	18.	19.	20.	
1. Camden, N. J.	3	4	9	11	11	12	10	63
2. Chester, Pa.			1	1	1	2	1	17
3. Chicago, Ill.	42	45	119	145	145	146	144	914
4. Columbus, Ohio	5	5	14	17	17	18	17	185
5. Grand Rapids, Mich.	3	3	9	11	11	11	10	148
6. Jersey City, N. J.	2	2	5	6	6	7	6	78
7. Little Rock, Ark.			1	1	1	2	1	16
8. New Orleans, La.	18	19	51	63	63	65	62	37
9. Newton, Mass.	1	1	2	2	2	3	2	29
10. Omaha, Nebr.	8	9	24	23	29	29	29	149
11. Portland, Me.	1	1	2	2	2	2	2	27
12. St. Louis, Mo.	12	13	35	43	43	45	42	667
13. Spokane, Wash.	2	2	5	6	6	7	6	76
14. Springfield, Mass.	2	2	5	6	6	7	6	91
15. Utica, N. Y.			1	2	2	2	1	10
16. York, Pa.			1	2	2	2	2	25

TABLE XIII.—*Enrollment in Young Men's Christian Association evening classes at each year of age from 14 to 20, expressed in percentages of total number of children 14 years of age.*

City.	Between 14 and 20 years of age.							Per cent of average attendance based on enrollment.
	14.	15.	16.	17.	18.	19.	20.	
1. Camden, N. J.	0.25	0.3	0.7	0.86	0.85	0.9	0.8	.....
2. Chester, Pa.			0.2	0.2	0.2	0.33	0.2	61
3. Chicago, Ill.	0.14	0.15	0.38	0.46	0.46	0.47	0.46	55
4. Columbus, Ohio	0.28	0.28	0.64	0.78	0.78	0.82	0.78	53
5. Grand Rapids, Mich.	0.19	0.19	0.56	0.68	0.68	0.68	0.62	58
6. Jersey City, N. J.	0.06	0.06	0.14	0.16	0.16	0.19	0.16	.....
7. Little Rock, Ark.			0.15	0.15	0.15	0.29	0.15	.....
8. New Orleans, La.	0.33	0.35	0.93	1.2	1.2	1.2	1.13	46
9. Newton, Mass.	0.20	0.20	0.40	0.40	0.40	0.60	0.40	.....
10. Omaha, Nebr.	0.16	0.22	1.4	1.7	1.7	1.7	1.7	56
11. Portland, Me.	0.14	0.14	0.28	0.28	0.28	0.28	0.28	.....
12. St. Louis, Mo.	0.11	0.12	0.33	0.4	0.4	0.4	0.39	53
13. Spokane, Wash.	0.31	0.31	0.77	0.93	0.93	1.1	0.93	56
14. Springfield, Mass.	0.21	0.21	0.52	0.62	0.62	0.73	0.62	.....
15. Utica, N. Y.			0.11	0.21	0.21	0.21	0.11	.....
16. York, Pa.			0.16	0.32	0.32	0.32	0.32	.....
Medians	0.17	0.17	0.39	0.41	0.44	0.54	0.43	.....

## III. CORRESPONDENCE SCHOOLS.

During the past ten years instruction by correspondence has had a remarkable development. It is impossible to ascertain the exact number of students enrolled in these schools, or to determine for any one of them the ages of the young people reached. An effort was made to this end in the case of the largest of them, the International Schools of Correspondence, of Scranton, Pa. The authorities there were unable to furnish the data. They definitely state, moreover, that it is impossible for them to tell in any given year what proportion of their enrolled students are actually at work—that is, are students in reality; so that figures given for this school can not be employed as

an exact statement of numbers enrolled, and especially as representing the actual amount of instruction given.

A like statement is not true of some of these schools, notably of the Chicago University Correspondence Schools, but even there no definite data are available. From all the statistics given it seems probable that the actual number between the ages of 14 and 20 taking correspondence courses in the cities under consideration is not much larger than the number enrolled in the Young Men's Christian Association classes. Since this latter number is so small proportionately, we can, for purposes of calculation, disregard the pupils in the schools of correspondence.

#### D. NORMAL SCHOOLS, UNIVERSITIES AND COLLEGES, AND PROFESSIONAL SCHOOLS.

The number of young people in the cities under consideration between the ages of 14 and 20 attending normal schools, colleges, and universities is not definitely known. A very rough estimate has been made for the country as a whole, based on the statistics given in the Report of the United States Commissioner of Education for 1904, Vol. I, page XI. The total number there given as attending the three types of institutions named is approximately as follows: Normal schools, 63,000; universities and colleges, 128,000; professional schools, 61,000. These include both public and private institutions.

The age distribution of students in universities and colleges is pretty definitely known; that of students in normal schools and professional schools is not so well known. Using the known data as a guide, the probable age distribution of the total number attending the institutions named has been determined as well as possible. Taking the total number of persons in the United States 14 years old according to the census of 1900 as a basis, the per cent of young people at each age in these institutions would be approximately: 17 years, 0.5; 18 years, 1.5; 19 years, 2.0; 20 years, 3.0.

To be exact, there should also be a correction for the pupils attending business colleges and commercial schools. It is impossible to secure as reliable data for these as for the higher institutions. The number of pupils enrolled in institutions of this class, according to the Report of the United States Commissioner of Education for 1904 (p. 2109), is 138,363. Although this exceeds the enrollment in universities and colleges by 10,000, the attendance is by no means comparable, since many of the courses given are only three or four months in length, and the actual time spent in the school is often very little. Nor do we have any accurate basis for distribution of these pupils by age. It probably is somewhat like that of students in normal schools and colleges, but we can not be sure of it. Altogether, it

seems best not to make any correction for these pupils, remembering, however, that a considerable number of young people are in attendance for a longer or shorter time in business colleges and commercial schools.

#### E. RÉSUMÉ OF SCHOOL ATTENDANCE.

The general situation in the selected cities is shown by the combined percentages of the schools of different types, to which is added the general correction for higher institutions. These represent the probable maximum enrollment. The combined percentages of school enrollment, based upon the total number of children 14 years of age, are:

	Per cent
14 years	83.77
15 years	57.05
16 years	39.64
17 years	23.84
18 years	14.74
19 years	9.99
20 years	6.93

This is shown also in the accompanying graphic representation (Diagram 4), which shows the per cent at each age in the schools of different types.

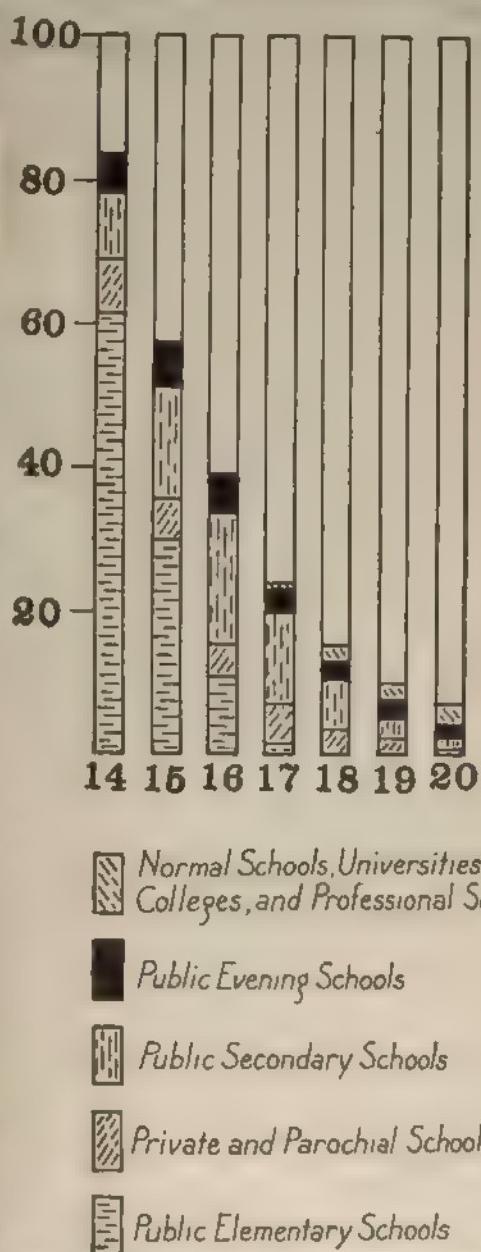


DIAGRAM 4.—Probable maximum enrollment in different types of schools at various ages, from 14 to 20 years, expressed as per cent of the estimated total number of young people 14 years old. It is a combination of Diagrams 1, 2, and 3, with the general correction for "higher institutions."

According to these statistics it appears that, taking the total number of young people between the ages of 14 and 20, 66.21 per cent are not in schools of any kind. At the different ages this appears as follows: At 14 years old, 16.23 per cent are not in school; at 15 years, 42.35 per cent; at 16, 60.36 per cent; at 17, 76.16 per cent; at 18, 85.26 per cent; at 19, 90.01 per cent, and at 20, 93.07 per cent. So far, then, we are safe in making the assertion that over half of the young people are not in schools of any kind. Whatever training they are receiving is that obtained in the actual work in which they are engaged.

#### F. OCCUPATIONS OF YOUNG PEOPLE NOT IN SCHOOL.

In considering the question of the need of continuation schools and the kind of instruction which should be given in them, it is very important to understand the conditions under which boys and girls are working after leaving school, in what kinds of occupation they are engaged, and what they are actually receiving in the way of general training.

It is entirely conceivable that, under certain conditions, many young people would receive better training for their actual life work and for citizenship outside the school than within its walls. For example, the boy who works with his father on the farm, doing the many kinds of work required of farmers, may be receiving more than he could in school, both in the way of development of manly character and of training for active intelligent citizenship. The same might be said of the girl who helps her mother in caring for the house and in cooking. It might even be true of the apprentice, if the old system of apprenticeship still prevailed, where each apprentice learned all the parts of a trade under the guidance of competent master who was interested in him.

But do such conditions prevail in our cities? Are they present in the cities selected? It would be very helpful if we could ascertain this in regard to the young people in these cities. But no reliable data exist on this point. It could only be definitely determined by a careful study of the situation in each place.

In the absence of definite data it is impossible to draw any valid conclusions. The following figures, based on returns published in the reports of the Twelfth Census, are, however, suggestive: In all of the 16 cities studied, of the total number of males between 10 and 15 years old engaged in "gainful occupations," 80 per cent are in the two classes, "Trade and transportation" and "Manufacturing and mechanical pursuits," and the same proportion exists in the age group 16 to 24. Of the total number of females between the ages of 10 and 15 engaged in "gainful occupations," 70 per cent are in the two

groups mentioned, while in the age group 16 to 24 there are 60 per cent. This means very little when we are considering the actual conditions under which these people are working.

Much more helpful are the data obtained by the Massachusetts commission on industrial and technical education, whose report was published in 1906. Their investigations were carefully conducted, and, while necessarily limited to the State of Massachusetts, the conclusions reached are well worthy of thoughtful consideration. The report is too well known to make it necessary to describe it in detail. Only a few of the conclusions which bear directly upon this subject are here given.

In summing up the investigations in regard to occupations, Dr. Susan M. Kingsbury says (p. 31) :

Thirty three per cent of the children of this State who begin work between 14 and 16 are employed in unskilled industries and 65 per cent in low grade industries; thus a little less than 2 per cent are in high-grade industries. This statement in itself, however, does not reveal the exact situation, even as far as these selected groups are concerned, since carpet, woolen, and knitting mills claim the greater part of the children in low-grade skilled industries. These industries are not as desirable as many of the other low-grade industries, such as jewelry, pamphlet binding, machine operating, and work with toys, in which children under 16 are not received.

Should we classify all of the mills with the unskilled <sup>a</sup> industries, we should find 69 per cent of the children in these undesirable industries, and but 26 per cent in the low-grade skilled industries.

By "unskilled industries" Doctor Kingsbury means "Those in which the work is the repetition of a single or simple operation, easily learned in a short time, and in which the knowledge of one part is not essential to that of another." In most of these a very low grade of ability is required, and they lead to nothing higher. Training in this or that particular kind of unskilled labor does not help the children in learning any other kind of labor. It is in such industries as these, and in the almost equally undesirable low-grade skilled industries, that most of the children from the ages of 14 to 16, and even older, are found. The condition of those who do not leave school until a little later, when they are 17 or 18 years old, seems to be much better, a much larger proportion of these being in high-grade skilled industries.

In regard to the value to the young worker of these years, Doctor Kingsbury says (pp. 87-88) :

Of what educational value are the years in these occupations? The mill affords a more rapid advance in wages for a year or two, but the maximum is attained in a few years. It holds the boy or girl, once having entered, and does not permit of development or advancement to a desirable occupation unless accompanied by training.

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<sup>a</sup> A typographical error in the report makes this read "low-grade skilled."

The low-class factories, such as rubber, confectionery, and paper afford the girl less wages and less opportunity, although they are perhaps more desirable in influence; but they never lead to anything which means development or growth in the industry itself, nor do they serve as a training for any other industry, while they certainly afford no preparation for home duties.

Department stores and errand positions do not afford a living wage, and offer no opportunity for advancement to one. They are distinctly bad in influence, since the younger employee is so shifting, resulting in instability of character. When the child has reached 16 or 17, he or she must begin again at the bottom.

Sixty-eight per cent of the children who commence work between 14 and 16 are subjected to the evil influences of these unskilled industries or are in mills. They have wasted the years as far as industrial development is concerned, and in many cases they have forfeited the chance ever to secure it, because of lack of education.

As would be expected, the wages received are very low. The medians of the average weekly wage in the unskilled industries range from \$3.39 for the 14-year-olds to about \$6.75 for the 20-year-olds. In the low-grade skilled industries they range from \$3.90 for the 14-year-olds to \$8.65 for the 20-year-olds. The highest average weekly wage for the unskilled industries ranges from \$4.05 at 14 years old to \$10.11 at 20 years old, while the lowest for the 14-year-olds is \$2.69 and for the 20-year-olds it is \$6. The highest average wage in the low-grade skilled industries is that paid to the 20-year-olds, \$10.30, the lowest at this age being \$6.81; at 14 years of age the highest is \$4.86 and the lowest is \$2.80.<sup>a</sup>

The hope, then, for the boy or girl who starts in at unskilled labor is not bright, either in the way of increase in pay or in prospect of higher grade of work.

It may be asserted that all this may be true for Massachusetts, but does not apply to other States or to cities not in Massachusetts. Although we have no definite facts to prove or disprove this, it does not seem likely that such is the case. The average grade of intelligence in Massachusetts is certainly not below the average of the country, and the compulsory attendance laws are better enforced there than in the majority of the States. Statistics collected in regard to withdrawal from school show that, on the whole, city schools in Massachusetts hold their pupils much better than the average of the city schools in other States. Again, in regard to the employment of children, the enforcement of the laws against child labor is certainly more rigid than in most States. While, owing to the fact that the number of mills and factories in Massachusetts is above the average, some conditions are met with in that State which are peculiar to manufacturing communities, yet it can be pretty clearly shown that the conditions in Massachusetts are fairly representative of those in the cities under investigation.

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<sup>a</sup> Report of the Massachusetts Commission on Industrial and Technical Education, pp. 113-115.

Such being the case, it is clear that under present-day conditions young people between the ages of 14 and 18, at least, do not find in the work in which they are engaged opportunities for training along lines which are helpful to them, either in their mental development or in the way of preparation for other occupations which are more remunerative or more desirable. Nor is the case of the favored few who are fortunate enough to be admitted as apprentices much better in this respect. In the first place they must be at least 16 or 18 years old. Then, too, the apprenticeship system as it is to-day is very different from that in the beginning of the nineteenth century, or even later. Very rarely does the boy learn all the operations of the trade under the eye of a competent master. He usually learns only one thing, one particular operation, and even this has to be picked up by him in a haphazard manner. There is little attempt at careful instruction. The old apprenticeship system, designed as it was for stationary conditions, has been forced to give way, and as yet we have no adequate substitute for it.

In the face of such conditions as these, what can be done for the young men and women no longer in school who are at work, for the most part, in those industries which offer no chance for advancement nor any training worthy of the name? In the next section will be shown some of the methods adopted by Germany and England to relieve similar conditions in those countries.

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### III. AGENCIES FOR SUPPLEMENTARY EDUCATION IN OTHER COUNTRIES.

#### A. GERMAN CONTINUATION SCHOOLS (FORTBILDUNGSSCHULEN).

Germany has a very thoroughly organized system of supplementary education for working people in her Fortbildungsschulen, or continuation schools. These ramify into all trades, and put within the reach of young workers the opportunity for further education and training. For a complete treatment of these schools, the reader is referred to the publications mentioned in the selected bibliography at the close of this bulletin. It will suffice for the present purpose to give a brief outline of the system.

In Germany, every kind of school has a definite place in the educational system. The stratification is, however, along vertical lines as well as horizontal. At the age of 10, if not before, the question of the future calling of the child must, very largely, be decided. If his parents are people of means, he then is taken out of the Volksschule and placed in some kind of secondary school, such as a Gymnasium,

a Realschule, or some technical school of secondary rank. In many cases he never has been in the Volksschule, but in a "Vorschule" of one of the secondary schools. In the great majority of cases, however, through lack of means or other reasons, the parent is compelled to deny his child secondary and higher education with their many advantages, and he remains in the Volksschule until the completion of its course, which occurs at about the fourteenth year. At this age most of the boys and girls go out into actual work. For these young people there has been established a system of continuation schools, attendance on which is in most of the States of Germany compulsory for at least two years. These are for the special purpose of continuing the instruction of the young workers after they are forced to enter the shops to earn a livelihood.

It must be borne in mind that these continuation schools are inseparably bound up with other agencies for industrial education and constitute only one phase of this work. As will be seen, there are all phases of gradation between the trade school and the continuation school, each supplementing the others. To obtain a complete understanding of the continuation school we must study the whole system of industrial education, as well as the economic and industrial conditions which have rendered such schools an essential feature of the development of the country. This would, however, lead too far afield for the present purpose, and we will confine our attention as far as possible to that phase of the general subject represented by the continuation schools.

*History.*—In their original form these continuation schools were Sunday schools for teaching religious truths to youth preparing for confirmation. They were first established by the bishop of Samland in 1569.<sup>a</sup> Gradually these developed, and under Frederick II secular subjects were introduced and the schoolmaster became the teacher. The general subjects were reading and writing. In 1765, according to the general regulations of Catholic schools of Silesia, all persons under 20 years of age who had left school were required to attend Sunday instruction in Christianity, and after this for two hours to attend lessons in reading and writing.<sup>b</sup> In some places a general education was given, while in others, where the need for it was more marked, various kinds of industrial education were introduced. Up to 1850 these schools had a remarkable growth, but from 1850 to 1870 they passed through a period of decline, due to several causes, among which may be mentioned the general feeling of unrest—of aversion

<sup>a</sup> Education Department (of England); Special Reports on Educational Subjects, Vol. I, p. 482.

<sup>b</sup> Technical Instruction. Special Report of the United States Commissioner of Education, 1869, p. 169.

to authority. Another reason was undoubtedly that primary education had been made compulsory. The people thought this was sufficient and would not support other schools. The war of 1870, however, showed Germany the value of universal education, and especially of industrial education.<sup>a</sup> She was quick to see her opportunity and at once began the development of a system of industrial education which has no parallel in the world. It has been a large, if not the chief, factor in the rapid development of her commerce and industry, which has enabled her to place herself in such a commanding position among the nations of the world.

In this system of industrial education the continuation schools have a very important place and have proven so well adapted to the needs of the working classes that they have been specialized for particular trades and have multiplied rapidly. They are now, without doubt, the most important factor in the education and training of the working people.

*Administration and control.*—The imperial order on the regulations of industry (Gewerbeordnung) of June 1, 1891, is a very remarkable decree, in that it is one of the very few imperial decrees on educational matters, these being left largely to the individual States. Portions of this decree are here given:

SEC. 120. The masters in any branch of industry are bound hereby, in the case of their workers under the age of 18 who attend an institution recognized by the authorities of their district or their State as a continuation school, to allow them the time fixed as necessary for such institution by the authorities \* \* \*. Through the ordinance of a district council or any wider communal body, attendance at a continuation school may be made obligatory for all male workers under the age of 18. In the same way, proper regulations may be made to secure the execution of such an ordinance. In particular, regulations may be passed to insure regular attendance and to determine the duties of parents or employers in this respect, and notices may be issued by which organization in the continuation school and a proper relation of the scholars to it may be assured. From the compulsory attendance based on such an ordinance are exempted only those persons who attend another continuation or technical school, provided that the instruction given in such school be recognized by the higher authorities as a complete equivalent for that given in the general continuation school (allgemeine Fortbildungsschule) \* \* \*.

SEC. 150. A breach of section 120 of this law is punishable by a fine of not exceeding 20 marks, or, in case of nonpayment of such fine, by imprisonment for a term not exceeding three days.<sup>b</sup>

The power to establish such schools is left entirely with the States or smaller divisions, as is the matter of compulsory attendance and general control; but when such schools are established and the work-

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<sup>a</sup> Education Department (of England): Special Reports on Educational Subjects, Vol. I, p. 483.

<sup>b</sup> Oscar Pache; Handbuch des deutschen Fortbildungsschulwesens, Vol. I, p. 49.

ers attend, their employers or parents are compelled by an imperial decree to allow them time for such attendance.

Prussia extends the imperial plan of control to divisions of the State—i. e., allows them to decide whether attendance shall be compulsory or not—while all other large States exercise complete or partial control. This extends principally to compulsory attendance, general curricula, and certain minimum requirements. The local authorities are left largely free to establish schools and to adapt them to the special needs of the workers.

The department of the State which has control of these schools varies according as they are considered part of the school system, or as institutions for the promotion of trade and commerce. In Prussia and Hesse the departments of trade and commerce and that of the interior have charge; in Bavaria, the department of education; while in Saxony, Baden, and Wurttemberg they are divided between the department of the interior and that of education. The rural schools are usually under the department of agriculture or that of the interior. The local authorities which are in control also vary. In Saxony, Baden, and Hesse the industrial school inspector has control; in Bavaria, the "county" school inspector, and in Prussia, the industrial school councils and directors have charge.

The original plan was that the establishment and maintenance should devolve upon private organizations and local governments, but there has been a marked tendency toward centralizing all authority in State governments. This has resulted in part from the State aid, which has increased continually and which has naturally brought with it a demand for a voice in the conduct of the schools, and in part from the effort to eliminate the waste resulting from having different systems in one State. Most of the States are now committed to the policy of supporting continuation and industrial schools, and hence have had to provide governmental machinery for their management.<sup>a</sup>

*Compulsory attendance.*—According to the imperial order of 1891, this is left entirely to the State or local authorities. All the larger States except Prussia have compulsory attendance laws, and the obligation for regular attendance is placed on parents and employers. In Prussia there is local option, but considerable effort has been made to secure the enactment of a compulsory law. Discretionary power is given to the minister of trade and commerce "to see that proper measures are taken." This has had a decided influence upon the introduction of local compulsory measures.<sup>b</sup> Many communities have already made attendance compulsory. In 1903, out of 1,169

<sup>a</sup> Report of U. S. Commissioner of Labor, 1902, p. 874.

<sup>b</sup> Meyer: Industrial Education in Germany, p. 41.

industrial continuation schools in Prussia, 997 had compulsory attendance.<sup>a</sup> Among those cities where attendance is now compulsory are Magdeburg, Posen, Düsseldorf, and Breslau. In Berlin it is still voluntary, but evidences are strong that at no very distant day it will become compulsory there.<sup>b</sup> In some Prussian cities certain classes are exempt from attendance, such as apprentices of apothecaries, fishermen, lawyers, etc. Many guilds and unions make such attendance compulsory for apprentices during all or part of their apprenticeship.

*Other features.*—The founders of these schools are often communes, guilds, industrial associations, and individuals. State schools are founded where the means of the locality are insufficient and where a national need exists, e. g., building trades and industrial art schools.<sup>c</sup>

The States give varying amounts, according to the needs of the communities, the community generally furnishing the quarters, heat, and light. The sources of support for the industrial schools in Berlin in 1896 and 1897 were: State, 86,089 marks; city, 329,363 marks; guilds, 9,115 marks; societies, 12,520 marks; total, 437,087 marks. Most schools charge a small tuition fee—1 to 10 marks per year. In some places, as Duisburg and Düsseldorf, the employers are compelled to pay the tuition fees in advance, but may deduct these from the wages.<sup>d</sup> In Breslau and some other cities instruction is free to apprentices, while others pay tuition fees.

The great majority of teachers are from the elementary schools. In many of the larger cities skilled technical instructors are secured, and preference is given to experienced, practical men. In most States no special training is necessary. In Prussia the teachers of industrial continuation schools take courses of from four to six weeks in drawing and in commercial branches. The expense is paid by the State, by communities, or by societies. There are a few schools giving special training established by the State, unions, and by societies.<sup>e</sup>

There is no general unified system of supervision. The industrial school inspector, where there is one, supervises the work, and the teachers of higher trade and technical schools supervise particular subjects of instruction.<sup>f</sup>

<sup>a</sup> W. Lexis: A General View of the History and Organization of Public Education in the German Empire, p. 178.

<sup>b</sup> Meyer: Industrial Education in Germany, p. 41.

<sup>c</sup> Report of U. S. Commissioner of Labor, 1902, p. 872.

<sup>d</sup> Gillert: Organisation einiger Fortbildungsschulen deutscher Grossstädte, pp. 6, 9.

<sup>e</sup> Lexis: Das Unterrichtswesen im deutschen Reich, Vol. III, p. 322.

<sup>f</sup> Report of U. S. Commissioner of Labor, 1902, p. 875.

German continuation schools, although they differ very markedly in character, may be divided into three main classes: (1) General continuation schools (*allgemeine Fortbildungsschulen*) ; (2) industrial continuation schools (*gewerbliche Fortbildungsschulen*) ; and (3) commercial continuation schools (*kaufmännische Fortbildungsschulen*).<sup>a</sup>

*General continuation schools.*—The purpose of these schools is general culture. They attempt to fix and widen the knowledge gained in the elementary schools and show its application to practical life; to establish a certain minimum of culture throughout the nation; to widen knowledge with a view of fitting the pupil for his function as a working member of society and a citizen endowed with the franchise.<sup>b</sup> These schools are quite uniformly distributed throughout the Empire, but receive their greatest support in rural communities and the smaller cities. They are the prevailing form in Saxony, Wurttemberg, Baden, and Hesse, and in about one-half of the smaller States, while Prussia and Bavaria are the great strongholds of the industrial continuation schools. The present tendency is distinctly away from these "repetition" schools and toward various kinds of industrial and commercial schools. This has resulted in part from increased specialization of trades and from the sharp competition which has made an increased demand on the part of pupils for specialized instruction; in part from a realization that the general continuation schools are inadequate to fulfill this purpose. This became apparent as soon as the revival of trade became general. Two principles were soon recognized: (1) That the code as laid down should be varied to suit the needs of the locality and (2) that there should be concentration of the subjects chosen around the special interests of the pupils, to be effected by bringing the pupils into the closest possible relations with the trades from which they were drawn.<sup>c</sup> The fact that the general continuation schools did not attain their object is shown in the words of Director Scharf, of the Magdeburg schools. He says: "The pupil will not obtain the general knowledge by himself from these schools, for he is concerned only with that which will give him practical efficiency, and he will thus take from the course only these factors and will neglect the general element. But the instruction can not bear directly on his

<sup>a</sup> Report of U. S. Commissioner of Labor, 1902, p. 895.

<sup>b</sup> Ware: Educational Foundations of Trade and Industry, p. 122.

<sup>c</sup> F. H. Dale: Continuation Schools in Saxony. In Education Department (England), Special Reports on Educational Subjects, Vol. I, p. 500.

practical life unless he is in a class where only one trade or a group of allied trades is represented.”<sup>a</sup> The change has been gradual, but very marked.

*Industrial continuation schools.*—The general purpose of these is to develop industrial efficiency. The instruction bears directly upon the trade of the pupil, and aims to better fit him for his present work and to prepare him for higher positions, or, in some cases, for work in higher technical institutions. It is to be noted that in these schools the aim is not skill, as no shop work is attempted, but only to give increased efficiency to the worker by teaching him the relation of the process to the whole industry, and the place the latter has in the activities of the community. These industrial continuation schools and the trade schools (*Fachschulen*) are inseparably connected with each other, and really form part of one system. In general, however, the trade school is a school where instruction is given during the day to those not at work, and where shop work or practical work is given, in addition to the technical instruction. In the industrial continuation school instruction is given mostly on evenings and Sundays to working pupils and is entirely technical. This school is midway between the general continuation school and the trade school. In many trade schools there are, in addition to the day classes, evening and Sunday classes for apprentices and others. Trade schools are often closely associated with industrial continuation schools and classed as such.

The industrial continuation school with special trade classes often leads directly to the special trade school. This is seen in Berlin, where the trade school has perhaps reached its fullest development. Doctor Bertram says, “The technical schools for each trade have been gradually, each in its own fashion, evolved from the continuation schools or founded on existing models.”<sup>b</sup> To show how this has been done, we can not do better than to trace the development of two such schools—the “Gewerbesaal” and the carpenter school. “The former aims at providing instruction in theory and drawing for apprentices and journeymen employed in machine construction, in artistic smithies, and by art locksmiths. The latter undertakes the training of young carpenters, who again are divided into builders, carpenters, and upholsterers of various branches. For both trades drawing classes have become a necessity. At the continuation schools

<sup>a</sup> E. Gillert: *Organisation einiger Fortbildungsschulen deutscher Grossstädte*, p. 14.

<sup>b</sup> Doctor Bertram: *Continuation Schools in Berlin. Special Reports on Educational Subjects*, Vol. IX, p. 457.

these classes had been intrusted to expert teachers and were attended by a large number of pupils. But the courses lacked direction."<sup>a</sup> Accordingly, these were separated from the general system in 1892 and 1893. At first the general plan was the same as in the continuation schools, but soon day classes were formed and the instruction took on the character of a trade school. At present they are entirely distinct. This is only one of the many instances where such a transition has occurred.

Industrial continuation schools are of various kinds, but may be classified roughly as follows: (1) General industrial continuation schools, where there are no special classes for particular trades; (2) trade industrial continuation schools, where there are classes for each trade or group of trades; and (3) agricultural schools, where the instruction is general and bears directly on agriculture. In many schools where the trades have separate classes they have an "allgemeine" (or general) class, which includes the pupils whose trades do not readily adapt themselves to special training, such as day laborers, errand boys, and all the unskilled laborers.

Trade continuation schools and industrial continuation schools with trade classes vary from schools of the general type to those in which there are separate classes for each trade. As is the case with other continuation schools, they are directly adapted to the needs of the particular locality in which they are placed, the emphasis on particular trades varying with the interests of the locality. This adjustable character of the schools accounts for much of the success with which they have been attended and for their remarkable growth. Of the general structure of these and the subjects pursued we will speak later.

*Commercial continuation schools.*—These are practically the same in general plan as the industrial continuation schools.

*Organization of continuation schools.*—The course of continuation schools varies from two to four years for boys, and from one to three years for girls. Schools in which the course is four years in length divide it into three consecutive grades and one preparatory class (*Vorklasse*). In others the divisions are dependent on the number of years. The number and division of classes varies greatly, as might be expected. In the general and rural continuation schools all of the same grade are taught together.

In many advanced industrial continuation schools, e. g., those at Magdeburg and Leipzig, each grade except the preparatory is divided according to (a) year of apprenticeship, (b) trade, and (c) maturity or ability. Thus there are parallel classes in each grade and ascending grades in each trade. This may be more clearly seen by taking

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<sup>a</sup> Doctor Bertram: Continuation Schools in Berlin. Special Reports on Educational Subjects, Vol. IX, p. 458.

the organization of one of the Magdeburg schools. In the three years above the preparatory grade there are 33 classes, arranged as follows:<sup>a</sup>

Grade.	According to ma u rity or ability.	According to trade and year of appren- ticeship.
Under class.....	I	6
Do.....	II	3
Do.....	III	2
Middle class.....	I	7
Do.....	II	3
Do.....	III	2
Upper class.....	I	6
Do.....	II	2
Do.....	III	2

This means that each year of the course is divided into three grades, according to the ability of the pupils. The lowest grade of the "under class" is subdivided into six classes, according to the trade or year of apprenticeship of the pupils; the second grade into three, and the third into two classes, and so on up through the "upper class." By this plan pupils of the same interests are grouped together, and also those of the same degree of intelligence or maturity. In Berlin there is an almost unlimited number of trade classes, each branch having ascending grades.

*Instruction time.*—The number of hours per week can in no case throughout the Empire be less than two, and in rural continuation schools having a term of only six months not less than four. In the general continuation schools the usual number is about two, but it is often more. In the industrial continuation schools it is usually from four to six and even more. The time of instruction is for the most part on week-day evenings for two or three hours, on Sundays two to four hours, mornings or afternoons, and in Bavaria on the weekly half holidays. When the instruction is on Sunday it is not allowed to interfere with divine worship. The time of instruction is one of the most unsatisfactory features regarding these schools. For some time the teachers and supervisors of continuation schools have realized that instruction in the evening is very unsatisfactory. "The student comes to his work tired from the day's labor and in a state of physical and mental lethargy."<sup>b</sup> Intellectual application on Sundays or in the evening leads to overexertion and is apt to arouse a feeling of repulsion in the learner toward the study which robs him of well-earned repose. It has been also suggested that "Sunday study of industrial subjects interferes with church work and leads to

<sup>a</sup> Gillert: *Organisation einiger Fortbildungsschulen deutscher Grossstädte*, p. 17.

<sup>b</sup> Meyer: *Industrial Education in Germany*, p. 37.

a neglect of religion and higher moral thinking."<sup>a</sup> A movement has been on foot for some time to transfer the periods of instruction, so far as possible, to the daytime, but it has met with only partial success.<sup>b</sup> Some of the main hindrances in the way of such change are the difficulty of obtaining room for assemblage and teachers for instruction. "The teachers are in many cases either engaged in industrial occupations or to teach in the public schools. The expense of hiring teachers for instruction in these schools alone would be entirely too heavy, so that the usual arrangement is the only one that has been found practicable if a proper standard of instruction is to be maintained. In many cases, also, these schools meet in rooms which are used during the day for some business or for other instruction."<sup>c</sup> Thus the expense of providing separate rooms would in many cases be prohibitive. "In the merchants' schools the difficulty is not so pronounced, as the children of merchants can more easily leave the office during the day hours than skilled hands can leave their machines in the factories and workshops."<sup>d</sup>

But in spite of these difficulties many places are making the change. The best results are attained in Baden, where, in 1899, 21 out of 46 industrial schools offered instruction in the daytime. In Zittau the classes are divided by trades, and, by arrangement with employers, convenient times are provided for special classes, e. g., locksmiths on Monday from 1 to 4 p. m., butchers on Tuesday from 2 to 5 p. m., etc. In Düsseldorf much the same arrangement is tried. In Leipzig each trade class is divided into two sections according to year of apprenticeship. Each section attends on a different day, and in this way the shops are not entirely emptied any day. The employers in many cases seem to be very willing to cooperate to this end.<sup>e</sup>

The term in rural continuation schools extends over the winter months, or from five to six months. In the majority of other schools it occupies the entire year.

*Curriculum.*—In the general continuation schools the subjects required are German and arithmetic, while the optional ones are geometry, mensuration (*Formenlehre*), drawing, and "Realien" (general knowledge of history, geography, and science). In the rural or agricultural schools, the most common subjects are German, agriculture, "Realien," and arithmetic. Other subjects given are agricultural bookkeeping, drawing, mensuration and land surveying, zoology, breeding of animals, physics, etc. All instruction is based

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<sup>a</sup> Meyer: Industrial Education in Germany, p. 22. <sup>b</sup> Ibid., p. 37. <sup>c</sup> Ibid., p. 23. <sup>d</sup> Ibid., p. 38.

<sup>e</sup> Special Reports on Educational Subjects, Vol. I, pp. 493, 494.

upon agriculture; that is the point of departure; thus the principle of the dominant interest of the pupil is fully recognized. In the industrial and commercial continuation schools the only subjects common to all are German and arithmetic. The others are extremely varied, depending on the locality, trade, and advancement of the pupil. However, they all have this in common, that the material is taken from some form of industry, and instruction based on this.

There are three subjects which are of special interest, namely, those called Berufskunde, Handelskunde, and Heimatkunde. The last is found only in Leipzig. These are best understood by referring to the subjects included under each in the special curricula given below.

Berufskunde seems to include a general knowledge of or information concerning a trade or trades, Handelskunde a general knowledge of commercial affairs, and Heimatkunde a sort of home government, history, and geography combined. The instruction in all varies to meet the needs of the community, and on this account probably ministers to definite local needs much better, so far as it goes, than any other form of German education, with the possible exception of the trade schools. To show the detailed character of the instruction given, some of the subjects included are here given. The detailed curricula of the subjects Berufskunde and Handelskunde are taken from the curricula of the Magdeburg schools, which are very highly organized, that of the Heimatkunde from Leipzig.

In the Magdeburg schools the organization is about the same as that given above, the trade divisions (Berufsklassen) being divided into a preparatory division, where the pupils are not separated according to trade, and three ascending divisions. These are each divided into (1) one-trade classes (Fachgewerbliche); (2) trade group classes (Berufsgruppen) and unskilled laborers (Angehörige ungelernter Berufe), such as servants, errand boys, etc. Each of these is again subdivided according to mental maturity.

The trade classes are in two divisions—one with drawing and the other without. In the classes with drawing the division of the time per week is, arithmetic 2 hours, German 2 hours, drawing 2 hours, including trade bookkeeping in the last school year for one hour weekly. The curriculum is devised and perfected for the individual vocations. The instruction in German includes the Berufskunde, which in Saxony is a separate branch of instruction. The character of the Berufskunde in the different trade classes is shown very well by that of the bakers' classes, in which the following chapters are treated, each of which has many divisions:

First year: (1) Apprentices; (2) journeymen; (3) masters; (4) baking rooms; (5) raw material.

Second year: (1) Ingredients; (2) fuel; (3) labor-saving machinery; (4) bread making.

Third year: (1) White baking; (2) fancy baking; (3) grain and flour commerce; (4) ways and means of traffic; (5) history of baking; (6) present guild system.

These are all very voluminous, as is shown by the topics treated in the chapter on "raw material," as follows: The bread grains, wheat, rye, etc.; preservation of grain; purpose of preservation; granary; handling of grain in the loft; selection and examination of grain; object of milling; grinding of grain; means of milling; kinds of mills; qualities of meals; meal tests; examination of gluten and ergot of rye; wheat-flour tests for beauty and quality; adulteration of meal; meal mixtures; names of meal; chemical composition and preservation of same; hurtful animals in meal. In addition to this, other articles are read and papers are written every two weeks.<sup>a</sup>

In arithmetic there is no systematic development through the consecutive grades. Specific groups of problems coming up in the course of the trade instruction are taken up and solved in the order of appearance in the chapters of the Berufskunde, as can be seen in the subjects taken up in the first year of the baker's classes: (1) Problems concerning the apprentice; (2) concerning the journeymen; (3) concerning the master; (4) concerning baking rooms; (5) concerning raw material.

In the commercial classes the Handelskunde is of the same general character as the Berufskunde in the trade classes. It is a "commentary" on the methods and life of commerce, treats of the transmission of merchandise, of correspondence.

In the Handelskunde the following chapters are treated:

First year: (1) Apprentice; (2) assistant employer; (3) direct handling of merchandise.

Second year: (1) Indirect handling of merchandise; (2) transmission of money, bills of exchange; (3) credit.

Third year: (1) Conduct of banks; (2) exchange; (3) commercial parties; (4) commercial companies; (5) means for furtherance of commerce; (6) history and retrospect.

To show the compass of each of these, the divisions of the chapter on "direct handling of merchandise" are given: (1) Concerning applications and proposals (including post cards, business papers, specimens of wares, letters, rates of postage, etc.); (2) information about orders and commissions (letters, special-delivery letters, registered parcels, telegrams, telephones, etc.); (3) execution of orders (bills, accounts, weight and merchandise, discounts, receipts of delivery, etc.); (4) cash payment, money sent through the post-office, kinds of money, etc.; (5) duns and withdrawal of balance, etc.<sup>b</sup>

In Leipzig the organization is very similar to that in Magdeburg. A single Berufskunde forms the center of instruction. The substance of the topics treated gives teaching material for German, arithmetic, geometry, and drawing. The Berufskunde aims to make the pupil acquainted with the technique of the special trade which he finally enters. It discusses the simple technique of the business, its

<sup>a</sup> Gillert: Organisation einiger Fortbildungsschulen deutscher Grossstädte, pp. 15, 16.

<sup>b</sup> Ibid., pp. 18, 19.

institutions and progress; legal and moral place of apprentices, journeymen, and masters; brings the spirit of the special trade to the pupil's understanding. The general education of the pupil is enlarged by the historical, geographical, and chemical references in this branch of instruction.

In the classes for unskilled laborers, or what are often called the general continuation schools, the Heimatkunde takes the place of the Berufskunde of the trade and the Handelskunde of the commercial schools. This is in addition to the instruction in German, arithmetic, and bookkeeping.

The course consists of two years and treats the following subjects:

First year: (1) Schools, (2) churches, (3) town hall, (4) streets, (5) promenades and public places of Leipzig.

Second year: (1) Leipzig commercial houses, (2) art and industrial institutions, (3) railroads, (4) environs of Leipzig.

Each of these chapters is very complete and detailed, and leads to a history and description of each particular portion of the city and country.<sup>a</sup>

The reading in the first year is taken entirely from the chapters of the Heimatkunde, but in the second year takes on a more literary character, when, among other things, the trilogy of Wallenstein is studied.

There are other special branches of instruction that are of interest which can only be mentioned here. In Dresden there is a branch called Realunterricht, in which a general study of the laws and statutes is combined with elementary political economy of a practical nature, aiming to make the young person understand his life problem rightly.

In the continuation schools for girls, which are not so common as those for boys, appropriate subjects are taken up, such as cooking, sewing, etc., in addition to reading, arithmetic, and drawing, which are given in all schools.

In the Empire as a whole the greatest emphasis, outside of German and arithmetic, is placed upon drawing. This includes free-hand and geometrical drawing and projection work, sketching, and special drawing relative to separate trades.

Statements in regard to the extent of influence of these continuation schools have been made by different authorities, but they are mostly of a very general character. It is necessary in considering any particular type of educational work to state not only its quality, but how many persons are reached. In Volume V of Pache's *Handbuch des deutschen Fortbildungsschulwesens*, pages 238 and 239, the total attendance at continuation schools of different types

<sup>a</sup> Gillert: *Organisation einiger Fortbildungsschulen deutscher Grossstädte*, p. 37.

is given for each of the divisions of the Empire, for Berlin, and for the divisions of Prussia. The figures for the Empire, for Prussia, and for Berlin are here given:

TABLE XIV.—*German continuation schools.*

[Statistics for 1900.]

	General (Allge- meine).	Trade and in- dustrial (Gewerbe und gewerb- liche).	Trade schools (Gewerb- liche Fach- schulen).	Com- mercial schools (Han- dels- schulen).	Agricul- tural schools (Land- wirt- schaft- liche schulen).	Schools for girls.		Total.
						General (Allge- meine).	Trade (Fach- schulen).	
German Empire....	187,942	269,524	46,003	38,117	41,532	80,663	28,966	692,737
Prussia .....	5,000	145,672	8,625	17,029	23,831	4,011	10,392	214,560
Berlin .....	5,000	20,314	1,039	2,089	379	3,409	3,859	36,039

These figures include some pupils whom we would not consider continuation-school pupils. It is not possible in the statistics to separate all of the lower trade school pupils from those in the continuation schools proper, for many are in the same school. Accordingly, the figures are somewhat too high. On page 240 of the same book there is given for each of the divisions of the Empire the number of pupils in the Fortbildungsschulen per 1,000 inhabitants. Some of the principal States are here given:

Prussia	6.7
Bavaria	8.9
Hamburg	14.0
Bremen	19.0
Lübeck	19.0
Saxe Weimer	22.0
Saxony	28.5
Hesse	34.3
Baden	35.25
Wurttemberg	50.0
Berlin	21.5
German Empire	11.9

It is seen by this that Prussia is considerably below the average of the Empire in the proportion of pupils in continuation schools, while Wurttemberg is considerably above any other State. Berlin is also above the average, but whether above the average of the larger cities can not be told. These figures include, of course, the same schools as the statistics already given, and should be somewhat lower for the Fortbildungsschulen proper.

An effort has been made to secure accurate quantitative data for a

study of the comparative influence of the elementary, intermediate, and higher schools and the Fortbildungsschulen on the young people between the ages of 14 and 20. This has met with only partial success. There seem to be very few statistics in regard to the ages of pupils in any of these schools. The data obtained include only Prussia, and take no account of trade and technical schools other than those included in the statistics for Fortbildungsschulen, but deal only with the four types of school mentioned. In the tables which follow (Tables XV and XVI) the statistics for the intermediate schools and the higher girls' schools have been combined with those for the higher schools for boys. The data for the higher schools were obtained from the Centralblatt, volume 19, those for the Fortbildungsschulen from Oskar Pache's Handbuch des deutschen Fortbildungsschulwesens, volume 6, while those for the Volksschulen have been taken from Preussische Statistik for 1903 and the Statistische Nachrichten über das Unterrichtswesen, 1904. In the latter is also given the population for Prussia between the ages of 6 and 14. From this gross number has been computed the estimated population at 13, following the distribution as found in England and the United States, which very closely follows data which are also at hand for the population of Berlin by ages from 6 to 14.

The number of children 13 years old and over in the public and private elementary schools is estimated. The only data found for the elementary schools in Prussia are the total number of pupils 14 years old and over, which is given in Preussische Statistik, 1903, page 9. In the Statistisches Jahrbuch der Stadt Berlin, page 360, the ages of pupils in all schools is given through the years 13 and 14, and the total number 15 and over. Taking these as a basis, the number 14 years old and over in the elementary schools of Prussia has been distributed over the age period 14 to 17. In the Centralblatt the number of pupils in each class of the boys' higher schools is given and the total number in all the intermediate and higher girls' schools. These have been distributed according to the age statistics for Berlin given in the Statistisches Jahrbuch. As this also gives the ages of all the pupils in these schools through the fourteenth year and for the Gymnasium, Realgymnasium, and Oberrealschulen up to the twentieth year, the distribution may be considered to be fairly accurate.

The only data by age for the continuation schools are those given by Doctor Kuypers in his report on the Fortbildungsschulen in

Düsseldorf.<sup>a</sup> Here he gives the pupils in the "voluntary" division by the age groups 14 to 15, 16 to 17, 18, 19, 20 to 24, 25 to 29, and over 30. In the absence of more complete data these were taken as a basis for the distribution of the pupils in the Fortbildungsschulen in Prussia. While the numbers may not be correct for any one age, they show, on the whole, the extent of influence of these schools on the young people between the ages of 14 and 20.

It is a well-known fact that in Germany practically all young people up to the end of the thirteenth year are enrolled and in attendance at school. According to official figures, less than 2 per cent of the total number of children between the ages of 6 and 14 are not in school, and only 0.01 per cent illegally kept away from school.<sup>b</sup> The Volksschule has naturally very little influence on the education of the young after the beginning of the fourteenth year. After this time the different educational agencies are the intermediate and higher schools, the various trade and technical schools, and the Fortbildungsschulen. This estimate of the educational opportunities for the young from the ages of 14 to 20 is, by its very character, incomplete, as it does not include the trade and technical schools. No fair comparison can be made between particular parts of two educational systems; they must be viewed as complete wholes in their relationship to the life and activities of the people. The following study aims only to show in a rough manner the relative place which each of the three types of school has in the education of young people in Prussia. The estimate made shows that about 7.4 per cent of the young people 13 years old are in elementary schools at 14 years. (Table XV.) The intermediate and higher schools do not play a very important part, quantitatively, in the education of the young, varying from 8.1 per cent at 14 years to one-fifth of 1 per cent at 20 years old.

The data for the Fortbildungsschulen (Table XVI) include not only the continuation schools proper, but also the Handelsschulen and the Gewerbe Fachschulen, which are considered parts of the continuation school system. Many of these schools have evening and Sunday classes, and it is impossible to separate them from the general continuation system. Accordingly the figures are somewhat too high. The relative number of pupils in these schools as compared with the whole can be seen by reference to Table XIV.

It is hardly fair to take Prussia as an example of the influence of the Fortbildungsschulen for the German Empire, because of the fact that that State has no general compulsory law, and, in consequence,

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<sup>a</sup> Dr. Franz Kuypers: Bericht über die Entwicklung der städtischen Fortbildungsschule, 1904, p. 41.

<sup>b</sup> Lexis: Public Education in the German Empire, p. 95.

the attendance is smaller than in the other large States; but no definite data could be obtained for any other German State or for the Empire as a whole. Prussia has 6.7 pupils in the Fortbildungsschulen to every 1,000 inhabitants, while the German Empire has 11.9.

Comparative tables have also been computed for Berlin, where there are 21.5 pupils per 1,000 inhabitants, and roughly for Wurttemberg, with 50 per 1,000.

In Prussia the per cent of young people reached by these schools is, on the whole, much the same as that of the evening schools in certain cities of the United States, which is shown on page 24. A comparison of the two shows that the Prussian schools have a greater proportionate attendance between the ages of 14 and 17; from 18 to 20 the American evening schools in the cities studied reach a larger proportionate number. If the data for the United States should include the whole country, and not cities of over 30,000 inhabitants only, the proportion would of course be very much less. In the case of Berlin the proportion is very striking, being over  $4\frac{1}{2}$  times that for Prussia as a whole. The figures for Wurttemberg, where these schools have their greatest development, would seem to show that a larger proportion of young people attend these schools there than are in attendance at the public schools in the cities of this country.

In making comparisons with England the fact must be borne in mind that in Germany industrial education is largely in day classes, and would not appear to any great extent in this estimate, while in England it is mostly in the evening and is reckoned in with the evening schools. In England the proportionate number between 14 and 20 is about twice that for Prussia, but less than half that for Berlin.

All these continuation schools, varying widely as they do in method, in character, and in plan, have as their object the training of young workers, after they have left school, in the direction of increased efficiency as citizens. There is no attempt to teach skill, nor even to teach a specific trade, but the effort is made to give to each pupil a full and complete technical knowledge of the trade in which he is engaged, and a realization of its place and function in the activities of the community. Flexible as they are in method and in kind and amount of instruction given, and largely under local control, they are admirably adapted to the needs of the working people. Little wonder is it that, in spite of adverse circumstances of evening and Sunday hours, they have grown in popularity and are recognized by the authorities as of the greatest importance, not only in the elevation of the workingman, but in the advancement of trade and commerce.

TABLE XV.—*Estimated number of pupils in Prussian schools at each year of age from 13 to 20, in 1901.*

	Between 13 and 20 years of age.							
	13.	14.	15.	16.	17.	18.	19.	20.
Public and private intermediate, girls' higher and boys' secondary schools..	67,283	59,491	29,036	24,650	19,421	12,437	3,417	1,811
Per cent of estimated population								
13 years old .....	9.2	8.1	4.0	3.4	2.7	1.7	0.5	0.2
Elementary schools.....	650,415	54,117	1,614	457	81	.....	.....	.....
Per cent of estimated population								
13 years old .....	88.8	7.4	0.22	0.06	0.01	.....	.....	.....

TABLE XVI.—*Age distribution of pupils in German Fortbildungsschulen, 1900.*

	Between 14 and 20 years of age.							21 and over (per cent of whole).
	14.	15.	16.	17.	18.	19.	20.	
Distribution taken as a basis (pupils between 14 and 20).....per cent..	25	24	21.25	16.25	8.0	3.25	2.25	2.36
Number of pupils distributed by ages:								
Prussia.....	52,377	50,282	44,520	34,045	16,761	6,809	4,714	5,052
Berlin.....	8,797	8,445	7,478	5,718	2,815	1,144	792	850
Per cent of estimated population 13 years old:								
Prussia.....	7.2	7.0	6.1	4.6	2.3	0.9	0.65	0.7
Berlin.....	33.4	32.1	28.4	21.7	10.7	4.4	3.0	.....
Wurttemberg (rough estimate) ..	76.3	73.3	64.8	49.6	24.4	9.9	6.9	.....

## EXPLANATION OF TABLES.

Table XV gives the number of pupils at each age between 13 and 20 in Prussian elementary schools, and in public and private intermediate, girls' higher, and boys' secondary schools grouped together. This is also expressed as per cent of the estimated population 13 years old, in the same way as is done for the schools in the United States in Table II, p. 15.

Table XVI gives the distribution of pupils in the Fortbildungsschulen of Prussia and of Berlin, with the per cent at each age on the estimated population 13 years old. A rough estimate is also given for Wurttemberg for comparison.

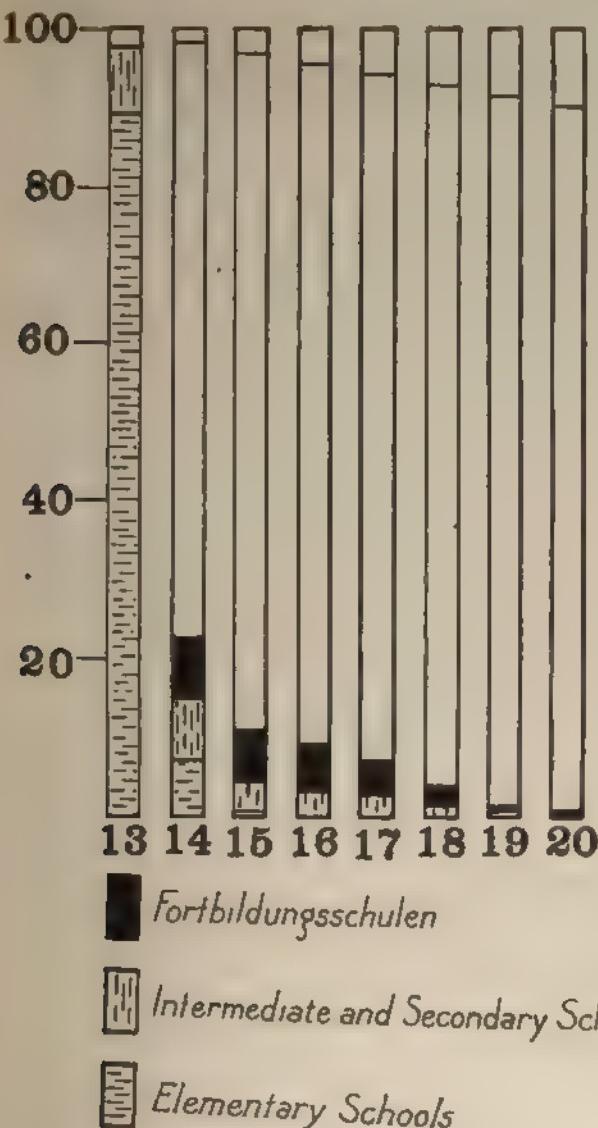


DIAGRAM 5.—Enrollment in Prussian schools between the ages of 13 and 20, the pupils at each age being expressed as per cent of estimated number of children 13 years old in Prussia. This would read, "The number of pupils 13 years old in the elementary schools of Prussia is 88.8 per cent of the total number of 13 year olds; those in the intermediate and secondary schools at 13 years old are 16.2 per cent of the total number of 13 year olds; at 14 years old the number in elementary schools is 74 per cent of the total number of 13 year olds and the number in the intermediate and secondary schools is 8.1 per cent of the number of 13 year olds. The number of 14 year olds in the Fortbildungsschulen is 7.2 per cent of the total number of 13 year olds in Prussia." The exact per cents can be seen by reference to Tables XV and XVI. The lines at the top of the columns show the elimination by death. Thus the distance between these lines and the base represents the total number living at each age.

## B. EVENING CONTINUATION SCHOOLS IN ENGLAND.

It is not to be expected that England would have as unified a system of continuation schools as Germany. Her general educational system has been in such an unorganized condition that this would be impossible. Nor does she have a system of trade and technical education in any way comparable with that of Germany. It is just because her educational system has not been fully organized, and because she has lacked a complete system of trade education, that her evening continuation schools have come to hold such an important place.

England had so long held undisputed supremacy in industrial affairs and commerce that she thought her place secure. She did practically nothing for the education of her working people. Germany had already learned the value of general education. She saw that if she ever hoped to reach the place in industry and commerce that she desired, she must depend on education and trained workmen.<sup>a</sup> Accordingly she set about this in her usual systematic and thorough way, and started her splendid system of trade and technical education, of which the continuation schools, as we have seen, are a very important part. Each State had its unified, centralized educational system upon which to build. As a result, England soon found that her industrial supremacy was threatened and her prestige in commerce largely taken away. It was not long before she recognized the reason for Germany's rapid progress, and herself undertook to remedy her inadequate provision for the education and industrial training of her working people. She had no unified, centralized system of education upon which she could build. The evening schools were the schools which were nearest to the people and most readily responsive to their needs. As a result, the greater part of technical and industrial education in England is confined to these evening schools.

The term "continuation school," as now employed by English educational authorities, is usually confined to the lowest grade of evening school, but it is used here with its previous meaning, and includes all of the evening classes.

*History.*—The history of the development of continuation schools in England is closely connected with the history of the guilds, the apprenticeship system, and the laws for the relief of the poor. The early education of the working classes was almost entirely of an industrial character—at least that part which was given outside the home. Previous to the sixteenth century, the poor received whatever education and training they had from two sources: (1) The monasteries, in connection with which was offered the most elementary

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<sup>a</sup> F. H. Dale: Continuation Schools in Saxony. Special Reports on Educational Subjects, Vol. I, pp. 482-483.

kind of education, and (2) the guilds, which provided money for the apprenticeship of poor boys. This apprenticeship included practical training and very elementary education connected with it. The income from the lands which they had acquired from time to time by purchase and gift gave to the monasteries and guilds the means of providing this education.

By the acts of Henry VIII, 1536, and Edward VI, 1547, the monasteries and free chapels were suppressed and all land belonging to them was given to the King. With these went the lands of the colleges, except those of Oxford and Cambridge, and all of the lands of the guilds, except those in London.

By these acts nearly all of the provision for the education of the working classes was taken away.

During the reign of Elizabeth the laws of apprenticeship and the laws for the relief of the poor placed the responsibility for the support and education of the poor largely on the people who had property. In the case of apprentices the master was to be responsible for the keep and training of his apprentices. Funds were raised by taxation to place poor children out to apprenticeship.

Up to the Reformation, therefore, practically all the education for the working classes was given in connection with apprenticeship, and of course was largely industrial, with only enough reading, writing, and arithmetic to enable the boy or girl to perform the ordinary duties of life. In fact, up to 1870 the idea of affording an opportunity for well-instructed youth to continue and broaden their education was not even conceived. The whole effort was to make up the deficiencies in the education of the working classes. Moreover, it was largely philanthropic.

After the Reformation education fell into the hands of the laity to a much greater degree than before, and more interest was taken in such work. Merchants and traders took a very active interest in the founding of schools for apprentices. Other efforts were directed toward the alleviation of the condition of the children of the poorer classes. Among these was a school founded in 1698 by the Society for the Promotion of Christian Knowledge. This society emphasized industrial work, and recommended that some form of manual training be employed in its schools on alternate days.<sup>a</sup> In 1701 a thoroughly successful school of this kind was opened in Westminster. This society also issued a circular recommending masters and employers to appoint some hours in the evenings of certain days of the week to teach such grown persons to read as had neglected study.

All of these efforts lacked unity, and it was not until the factory act of 1802 that the education of apprentices was made the subject of

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<sup>a</sup> G. C. T. Bartley: Industrial Schools for the People, 1871, p. 326.

legislative provision. This was entitled "An act for the preservation of the health and morals of apprentices and others employed in cotton and other mills and factories." Among other things, the act provided that all apprentices in cotton and woolen mills and factories during the first four years of apprenticeship be taught reading, writing, and arithmetic, or one of them, upon every working day during the hours of work by a teacher provided and paid by the employer.<sup>a</sup> Religious instruction was also given on Sunday. Thus the responsibility for this instruction was definitely placed on the employer. In 1806 a private evening school for boys and girls who had to work during the day was opened at Bristol by the Benevolent Evening School Society.<sup>b</sup> The instruction afforded in this school was gratuitous, and only for sons and daughters of the laboring poor. The subjects taught were reading, writing, and arithmetic. Then for nearly forty years little was done in developing this kind of educational work; but in 1839 Bishop Hinds laid especial emphasis on the importance of evening schools, and recommended that instruction in them be limited to those under 16 years of age.

After 1830 another agency was largely instrumental in establishing and extending evening continuation work, namely, the science and art department. This was the second great department directly concerned with education which offered grants of public money to those managers, teachers, and students who fulfilled the conditions it laid down.<sup>c</sup> It grew out of the action of the committee of trade, now the board of trade, through whose efforts a normal school of design was established in 1836 and an appropriation of £1,500 made for that purpose. In 1852 the arrangements were remodeled and a department of practical art was established. A science division was added the following year, when the title of department of science and art was first bestowed. In 1856 this establishment was removed from the board of trade to the new education department under the lord president of the council. This department has enjoyed greater freedom than the education department in the establishment of schools, in the subjects taught, and in general control. The education department was finally limited to England and Wales, while the science and art department long continued to extend its grants to Scotland and even to Ireland. It has been more progressive and has placed less restriction upon the schools under its control. The instruction has naturally had an industrial trend, but it has sanctioned every subject taught in schools, with the exception of the classics.

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<sup>a</sup> J. E. G. de Montmorency: *Progress of Education in England*, 1904, p. 68.

<sup>b</sup> Bartley's *Journal of Education*, p. 44.

<sup>c</sup> Graham Balfour: *Educational Systems of Great Britain and Ireland*, p. 154.

In 1851 the education department first began to give grants to elementary evening schools, and in 1855 the first capitation grants were made to them. Payments were also made to teachers in these schools, but until 1861 teachers in day schools were forbidden to teach in night schools. The revised code of 1861 withdrew aid to teachers, but abolished the restriction on day school teachers. Capitation grants were made on average attendance and payments were made for results of examinations in reading, writing, and arithmetic. During this time and until 1893 schools received grants from both the education department and from the department of science and art. The result of the restrictions of the education department was to make these schools rely more and more on the department of science and art.<sup>a</sup>

The attendance at evening schools increased up to the year 1870. In that year the act relative to evening schools set no limit on the age of students nor was the work compulsory. The instruction given was almost entirely limited to elementary work, in that grants were given only for such work. Work of a more advanced character was, nevertheless, demanded by the students and given. Boards of education were not specifically empowered to conduct evening schools, but the times when schools should be in session were not defined, and hence the boards were left free to do as they pleased. The next year the grants were definitely limited to persons not over 18 years nor under 12 years of age.<sup>b</sup> This resulted in a decrease in the number in attendance. In 1876 the upper limit was raised to 21 years. In 1882 no grants were given except to those between the ages of 14 and 21.

The restriction of instruction to elementary subjects greatly decreased the usefulness of these schools and resulted in a decreased attendance. In 1888 the commissioners of elementary education recommended that the evening school system be thoroughly revised; that a special curriculum and a special schedule of standards and subjects be allowed, suitable to the need of the locality, and that local managers be encouraged to submit such schedules to the department for approval; that the provision in the code requiring all evening school pupils to pass examinations in reading, writing, and arithmetic as a condition of taking additional subjects be suspended and no superior age limit be imposed.<sup>c</sup>

In the act of 1890 it was definitely stated that the principal part of the instruction need not be elementary. This resulted in a very rapid

<sup>a</sup> Balfour: *Educational Systems of Great Britain and Ireland*. pp. 40-43.

<sup>b</sup> Minutes of the School Board of London, Vol. I, p. 89.

<sup>c</sup> M. E. Sadler and J. W. Edwards: *Public Elementary Education in England and Wales, 1870-1895*. In Education Department (England) Special Reports on Educational Subjects, Vol. I, p. 54.

development from elementary to advanced work. Shop instruction and special industrial subjects were introduced and became popular. Thus these schools more and more grew to be secondary in character. The public had refused to provide for such training in the public day schools, and it was inevitable that the evening schools, responsive as they always were to the needs of the people, should take on the character of secondary schools for the masses.

A further impetus was given in 1893, when a new code for evening continuation schools was published. The following were stated as the aims of these schools:

1. To offer a wide choice of subjects adapted to the needs of all.
2. To give freedom to managers in the organization of the schools.
3. To render the course concise and yet complete in essential details, and to make it possible for the school to take advantage of the grants offered by the board.<sup>a</sup>

The main changes introduced were: (1) Attendance of persons over 21 was recognized; (2) no scholar was compelled to take the elementary subjects; (3) duplicate grants by the education department and the department of science and art were avoided; (4) grants were based on work of the schools as a whole, and not on that of individual scholars; (5) grants were based, not on attendance, but on the aggregate number of hours of attendance; (6) examinations were to be without warning instead of on fixed days. Elementary instruction was continued for those who needed it.<sup>b</sup>

In 1900 the Cockerton judgment declared it illegal for school boards to apply the Parliamentary grant for other than elementary subjects or for pupils above 14. While this decision deprived the evening schools of the grant for elementary education, it had nothing to do with the grants from the science and art department. The action would have seriously crippled the work but that by the acts of 1901 and 1902 provision was made for continuing evening schools from year to year, and special grants were made for them. By the act of 1902 it was definitely declared that "all instruction after 4 p. m. is secondary," thus definitely deciding that hereafter the evening schools should not receive grants as elementary schools. Elementary instruction was still provided and grants made for it, but higher grants were paid for more advanced work. By this act the previous regulations regarding the evening schools were combined with the science and art regulations in so far as these affected the evening schools.

The evening schools as now conducted in England have a definite place in the educational system. Their value and function is brought

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<sup>a</sup> M. E. Sadler and J. W. Edwards: Public Elementary Education in England and Wales. 1870-1895. In Education Department (England) Special Reports on Educational Subjects, Vol. I, pp. 54-55.

<sup>b</sup> Balfour: Educational Systems of Great Britain and Ireland, pp. 40-43.

out clearly by the prefatory note to the Regulations for Evening Schools for 1905:

Every year affords further demonstration of the high value that attaches to the work of the evening schools where these have been developed in number and variety comparable with the needs of those who may be expected to attend them. The defining feature of the schools and classes passing under this general designation is that they are intended to maintain educational facilities for those already engaged in some occupation which takes up the greater part of their time. They therefore meet normally in the evenings or on Saturday afternoons; but where the employment by which the students earn their livelihood renders other times more convenient, classes meeting in the daytime may be recognized under the same category and are eligible for grants.<sup>a</sup>

As with the German continuation schools, these schools have grown up in response to a definite need, and so are better adapted to the varying requirements of the localities in which they are situated than are the regular elementary day schools. To quote again from the prefatory note:

So diverse are the conditions under which such schools have to take part in the work of education, that no single definite scheme of organization or course of study can be prescribed as applicable to all localities. Circumstances of life in town and country, the number and variety of industries in the locality, previous education, and future prospects of students are some of the considerations that affect materially the possibilities of evening class teaching. In view of this great range of conditions, regulations which have to be of national application must necessarily be elastic. These regulations are drawn so as to permit the direct adaptation of the course of instruction in each school to the needs of the locality. At the same time they prescribe limitations which aim at securing definite educational results as a condition of grants.<sup>a</sup>

*Conditions of admission.*—No pupils are admitted who are not exempt from attendance at the regular day schools. The law requires all between the ages of 5 and 14 to attend the day schools unless they have attained a certain standard. The minimum age for admission to the evening schools is 12 years and very few are under 13. The age percentages of evening school pupils are shown in the statistics given on page 72.

*Organization.*—The organization is extremely varied. In the more advanced schools regularly organized courses are provided, extending over several years. In some there are also junior courses in elementary subjects, which are preparatory to the more advanced work. The aim of these courses is to afford pupils a complete training connecting their previous work in the elementary school with their coming technical studies. In these classes the material for study is taken directly from the industries in which the students are engaged.

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<sup>a</sup> Regulations for Evening Schools, Technical Institutions, etc., 1905. Prefatory Memorandum. (In N. U. T. Edition of Code for 1905, p. 162.)

In order to give a better idea of the organization in the more progressive schools, three systems will be given in detail; one in Montrose, Scotland; one in Leeds, and one in Manchester.

*Montrose.*—At Montrose there are not so many difficulties in the way of organization, owing to the comparatively small size of the city, but its system serves to show what may be done in the smaller places. There are three, or possibly four, divisions: First, there is the elementary division, which consists of a one-year course and "serves the purpose of completing an unfinished elementary school education." "It is open to all who are free from the obligation to attend school in terms of the education act."<sup>a</sup> Secondly, there are the courses grouped under the heads of domestic, commercial, industrial, science, and art studies. These are open to all who are over 16 years of age or who hold a qualifying certificate from the first or elementary division. Some of these courses are only one year in length, as the domestic course, while others are laid out for three or even four years of work. The third division consists of a one-year course, and is called the "Recreative course." It comprises courses in physical drill, gymnastics, and swimming, and is open to all who are in regular attendance on any of the other classes. It is thus supplementary to the others.

*Leeds.*—The system as organized in Leeds merits careful study. Here there is a definite attempt to meet the requirements of all grades of workers from the employer downward, and so to coordinate all the educational activities that each will work for the benefit of the others. The scheme is given in detail in a pamphlet issued by the higher education department of the city of Leeds for the year 1906-7. Only a few of the more important items will be given here.

There are five main lines laid out:

- I. Technical and technological education and training.
- II. Commercial education and training.
- III. Education and training in art.
- IV. Education and training in domestic arts.
- V. Training course for teachers of all grades.

Each of these except the last has its foundation in the general evening schools, which are made preparatory to the later courses; that is, while the work in all the general evening schools is very similar, it is adapted more or less to the courses which follow. Starting, then, with the preparatory course in the general evening schools, we see a continuous line up through the elementary and intermediate courses to the advanced courses, and ending, in the case of the technical and commercial courses, in the University of Leeds. The "ladder" of the evening work in technology and that in commercial education is here given.

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<sup>a</sup> Prospectus of Continuation Classes of Montrose. 1906-07.

*Grade IV.*—The University of Leeds. (Special lecture courses.)

*Grade III.*—Advanced and honors course.

*Grade II.*—Elementary and intermediate courses.

*Grade I.*—General evening schools. (Preparatory courses.)

The various technical and commercial schools throughout the city are utilized for this instruction, as are the art schools and the "domestic institutes." It thus becomes possible for anyone to pass through the different grades and receive a well-rounded and complete course in any branch of instruction which he wishes to pursue.

All of these courses are very complete. That in technical and technological education provides complete courses for persons engaged in the following trades:

1. Engineering trades.
  - a. Mechanical engineering.
  - b. Electrical engineering.
2. Electrical industries.
3. Building trades.
4. Leather and boot trades.
5. Clothing trades.
6. Chemical and allied industries.
7. Mining.
8. Textile industries.
9. Printing.
10. Farriery.

The instruction is by competent teachers and is very thorough and systematic.

Another interesting feature is the special half-day and evening engineering course which has just been established. This is offered to students in mechanical engineering. "By this means engineering employers of the city and district now have the opportunity of sending apprentices and trade boys who have exceptional merit or ability to the department of mechanical engineering of the technical school to receive a more thorough course of study than is possible in evening classes alone. Arrangements are made for a complete four years' course." Pupils must be over 16 years old, and preference is given to those actually engaged in engineering works who are sent by their employers. It is the intention to extend this plan to other lines of industry and trade represented in the city.

It is impossible to go into detail regarding the particular studies pursued. Enough has been given to show that in Leeds there is a very carefully worked out plan of coordinating and unifying the system of education for the working people. There has been a careful study of the conditions and needs of the city, and a definite, well-devised plan for meeting these needs, utilizing all the existing means for this end.

*Manchester.*—In Manchester there is also a graded system. In some respects it is not so elaborate as the one in Leeds, while in others

it is more complete. Manchester is noted the world over for its technical schools. Much the larger part of the system of technical education, as far as the number of pupils is concerned, has to do with the evening schools, in which there are enrolled nearly 30,000 pupils. As in Leeds, the buildings of the day technical schools are utilized.

The graded system here given is taken from the *Directory of Evening Schools and Classes* for the year 1906-7, published by the education committee of the city of Manchester.

The following table illustrates the graded system of courses of instruction in the Manchester evening schools:

#### GRADE III.

MUNICIPAL SCHOOL OF TECHNOLOGY.—Specialized instruction in science and technology.	MUNICIPAL SCHOOL OF COMMERCE.—Specialized instruction in commercial subjects.
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#### GRADE II.—Branch technical and commercial schools; evening institutes for women and girls.

Technical courses extending over 3 years, to meet the requirements of all classes of artisan students.	Commercial courses extending over 3 years, to meet the requirements of juniors in business houses.	Domestic course extending over 2 years, for women and girls over 16 years old.
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#### GRADE I.—Evening continuation schools.

Preliminary technical course extending over 2 years, for boys engaged in manual occupations.	Preliminary commercial course extending over 2 years, for boys and girls engaged in commercial or distributive occupations.	Preliminary domestic course extending over 2 years, for girls desirous of receiving a training in domestic subjects.
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#### GENERAL COURSE.

For boys and girls who desire to improve their general education or who are not sufficiently prepared to take advantage of the above courses.

It will be seen that there are also well laid out courses based on the general continuation school and ending in the municipal schools of commerce and of technology. A boy entering the evening continuation school at 14 would thus nominally reach Grade III by the time he was 19 years old. The Municipal School of Commerce is an evening school entirely, and the School of Technology very largely so. In 1903 out of a total of 4,924 students only 234 were day pupils.

The whole population is considered in the organization, as at Leeds, and the needs of all classes of industrial workers, young and old.

*Curriculum.*—According to the code of 1905 the subjects in the evening schools of England are grouped in six divisions, as follows:

I. Preparatory and general: Reading, composition, writing, arithmetic, knowledge of common things, elementary principles of science, elementary drawing, life and duties of citizens, theory of music, and vocal music.

**Literary and commercial:** English, Latin, French, German, any other modern language, geography, history, economics, mercantile law and practice, commercial correspondence and office routine, bookkeeping, shorthand.

**II. Art.**

**III. Manual instruction:** Includes woodwork and metal work.

**IV. Science:** Any generalized or special branch of science, including mathematics, will be accepted if adequate.

**V. Home occupations and industries:** Needlework, domestic economy, cooking, dressmaking and cutting out, laundry work, dairy work, gardening, cottage industries, ambulance, home nursing.

**VI. Physical training.** This aims at the general physical development of those instructed. Adapted to the age and sex of the pupil.

These are the subjects authorized by the board for which grants are given. Few schools have all of these, nor is it intended that they all should. On the other hand, other subjects than those mentioned may, at the discretion of the board, be recognized. All schools must have at least two subjects, although no pupil is compelled to take more than one subject.

As has been said, the whole organization and plan of the schools is flexible, so that it may adapt itself readily to the needs of different localities. As a result, we find widely varying conditions in different places. In the rural districts courses are given in dairying and farriery as well as in the regular elementary subjects. In industrial centers the work takes on a distinctively industrial cast, and aims at supplementing the practical work of the apprentice. In other localities the instruction is more formal, and is comparable to that in the secondary school. There can be no doubt, however, that where the instruction is based on the vocation, as in industrial or commercial schools, the interest is far greater and the practical benefits derived are correspondingly more far-reaching and lasting. Pupils in general are unwilling to spend the time and energy necessary for general education, but must see some practical results forthcoming. The curriculum, as well as the whole character of a school, must shape itself to the needs of a particular locality, and hence must be studied with reference to the particular city in which it is situated. A glance at the course of study laid out in any of the industrial centers, such as Leeds or Manchester, will show the great variety of subjects given. No adequate idea of the course as a whole can be given here.

In order to give some idea of the arrangement and character of the work, three tables showing the courses of instruction in the Manchester schools are here given. By reference to the previous table of the organization of the schools, the proper place of each can at once be determined.

*Courses of instruction extending over two years for students of evening continuation schools at Manchester.*

SECOND YEAR EVENING CONTINUATION SCHOOL COURSE.

Preliminary artisan course for boys engaged in industrial pursuits.	Preliminary commercial course for boys or girls engaged in commercial or distributive occupations.	Preliminary domestic course for girls and young women who desire instruction in domestic economy subjects.	General course for boys and girls who are too backward to take one of the foregoing courses and who require instruction chiefly in the subjects of the day school.
<i>Hrs. wkly.</i> Workshop arithmetic ..... 2 Woodwork and practical drawing ..... 2 Elementary science. 1 English..... 1  —————— 6	<i>Hrs. wkly.</i> Commercial arithmetic..... 2 English ..... 1 Commercial correspondence and office routine..... 1 Geography ..... 1 Book keeping or shorthand ..... 1  —————— 6	<i>Hrs. wkly.</i> English ..... 1 Dressmaking ..... 2 Home nursing ..... 1 Cookery <sup>a</sup> ..... 2  —————— 6	As below.  —————— 6

FIRST YEAR EVENING CONTINUATION SCHOOL COURSE.

<i>Hrs. wkly.</i> Workshop arithmetic ..... 2 Woodwork and practical drawing ..... 2 Elementary science. 1 English..... 1  —————— 6	<i>Hrs. wkly.</i> Commercial arithmetic..... 2 English ..... 2 Geography ..... 1 Book keeping or shorthand ..... 1  —————— 6	<i>Hrs. wkly.</i> English ..... 1 Arithmetic and household accounts ..... 1 Needlework and dressmaking ..... 2 Cookery <sup>a</sup> ..... 2  —————— 6	The students in this class, as a rule, will receive instruction in reading, handwriting, and composition, the simple rules of arithmetic, with or without the addition of one or two other subjects, at the discretion of the head teacher. As the students will be of varying attainments, much of the teaching will necessarily be individual.
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<sup>a</sup> Where cookery can not be taken, millinery or needlework may be substituted.

*Courses of instruction extending over three years for artisan students in branch evening technical schools at Manchester.*

SECOND YEAR TECHNICAL COURSE.

Engineering course.	Building trades course.	Chemical industries course.	Electrical course.
<i>Hrs.</i> Machine construction ..... 2 Applied mechanics (theoretical and practical) ..... 2 Mathematics ..... 1 Geometry ..... 1  —————— 6	<i>Hrs.</i> Building construction ..... 2 Applied mechanics (theoretical and practical) .. 2 Mathematics. .... 1 Geometry ..... 1  —————— 6	<i>Hrs.</i> Chemistry (theoretical and practical) ..... 2 Physics (theoretical and practical) ..... 2 Mathematics ..... 2  —————— 7	<i>Hrs.</i> Magnetism and electricity (theoretical and practical) ..... 2 Mathematics and geometry ..... 2 Special machine drawing for electrical engineers.. 2  —————— 6

*Courses of instruction extending over three years for artisan students in branch evening technical schools at Manchester—Continued.*

## FIRST YEAR TECHNICAL COURSE.

Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Machine drawing.....	Building construction .....	Chemistry (theoretical and practical) .....	Magnetism and electricity (theoretical and practical) .....	
Applied mechanics (theoretical and practical) .....	Applied mechanics (theoretical and practical) .....	Physics (theoretical and practical) .....	Experimental mathematics ....	
Experimental mathematics ....	Experimental mathematics ...	Experimental mathematics ...	Applied mechanics (theoretical and practical) .....	
6½	6½	7	7	

## PREPARATORY TECHNICAL COURSE.

	Hours weekly.
Experimental mathematics .....	3
Preliminary physics (theoretical and practical) .....	2½
English composition.....	1
	6½

*Courses of instruction extending over three years for students of the branch commercial evening schools at Manchester.*

## SECOND YEAR COMMERCIAL COURSE.

Shorthand clerks and typists.	Junior and invoice clerks.	Bookkeepers.	Correspondents and shippers' clerks.	Civil service.
Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Correspondence and office routine .....	Commercial arithmetic ... 1	Commercial arithmetic ... 1	English .....	Arithmetic.. 2
and office routine .....	Bookkeeping .. 2	Bookkeeping .. 2	A modern language .....	Composition and hand-writing ... 2
2	Shorthand .....	Shorthand .....	Correspondence and office routine .....	Geography.. 2
Shorthand .....	Correspondence and office routine .....	2	1	
English .....	1	English .....	Commercial geography..... 1	
Commercial arithmetic ... 1	1	1	Bookkeeping or shorthand ... 1	
	6	6	6	6

## FIRST YEAR COMMERCIAL COURSE.

Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Correspondence and office routine .....	Commercial arithmetic ... 1	Commercial arithmetic ... 2	English .....	Arithmetic.. 2
and office routine .....	Bookkeeping .. 2	Bookkeeping .. 2	A modern language .....	Composition and hand-writing ... 2
2	Shorthand .....	Shorthand .....	Correspondence and office routine .....	Geography.. 2
Shorthand .....	Correspondence and office routine .....	1	1	
English .....	1	1	Commercial geography..... 1	
Commercial arithmetic ... 1	1	1	Bookkeeping or shorthand ... 1	
	6	6	6	6

## PREPARATORY COURSE FOR ALL CLASSES OF COMMERCIAL STUDENTS.

	Hours weekly.
Commercial arithmetic .....	2
English.....	2
Geography .....	1
Commercial correspondence and office routine.....	1
	6

Girls in branch commercial schools may have the option of taking a domestic course when such subjects are already taught in these schools.

In the effort to reach the rural communities, traveling schools have been established in not a few places. These have proven to be of very great service. In Hampshire the education committee maintains two of these schools, namely, a dairy school and a traveling forge for instruction in farriery. These travel for forty weeks during the year, giving a course of ten days in each place.<sup>a</sup> In the dairy school there are ten churns, one for each student. The students are taught how to make butter and soft cheese, and are instructed in the use of the cream separator. Among the appliances used is a Gerber butter tester, and when the dairy school is located in a district the farmers of the district can have their milk tested free. The fee for a ten-day course is 2s. 6d.; for five days, 1s. 6d. The work is very much appreciated and is thoroughly remunerative also. The traveling forge accommodates four persons at a time. Only smiths are allowed to attend. The class is usually held from 6 to 7 p. m. The van is equipped for horseshoeing, and a very practical course of instruction is given. Although there are many continuation schools of a very elementary character in the rural districts, there is very little support for them; while these traveling schools, ministering directly to the needs of the people, are cordially welcomed and supported.

*Administration.*—As was seen from the history of these schools, the administration was formerly divided between the science and art department and the education department. Now, as far as they are administered by educational authority, the education department has complete charge. It is well to realize, however, that a great many of these schools, especially in London, were founded by the various guilds, and many are conducted in connection with the private technical schools throughout the country. These night classes often reach a far greater number of people than do the day classes. All these may receive grants from the education department if their courses comply with the regulations. So we see that the education department has come to exercise supervision over schools of diverse character, which are supported by agencies of widely different natures. Those established or taken over by the local educational authority come directly under its jurisdiction, while those established and supported by other agencies do not, and are independent except in regard to the grants. They must comply with certain conditions imposed by the education department if they wish to receive the grant. “Natural development has brought about a condition in which industrial success, responsible citizenship, and social solidarity all require intelligent and moral stability.” Hence the education of the working people is no longer a private matter, but an urgent

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<sup>a</sup> M. E. Sadler: Secondary Education in Hampshire, p. 62.

necessity resting on the state. It has thus come about that more and more the state is taking upon itself the support and education of the working people.

*Support.*—Each school is supported partly by local authority, either private or public, and partly by public grants from the central government. At least 25 per cent of the expenditure of the school must be met by the local authority, by endowments, subscriptions, tuition fees, etc.<sup>a</sup>

The system of grants has changed greatly from time to time. At present the public grants are extensive and variable. It is by this means that the central educational authority exercises supervision and direction over these schools. Grants are limited to pupils over 12 years of age and to instruction given after 4 p. m., although by special arrangement the latter rule may be broken. "No grant will be made for instruction in any subject or course in which less than twenty hours of instruction is given in the year. No student's attendance in any course may be counted unless he has received at least fourteen hours' instruction in that course."<sup>b</sup>

The grants are given for attendance and for results of examinations. The grants for attendance vary from 1s. 6d. for physical training to 3s. 6d. for ordinary work in the other divisions. This amount can be and usually is increased for special work. As high as 25s. may be given in some science subjects. Such grants are payable to the school for each scholar for each complete twenty hours of instruction received. The number of hours that can be counted for such work is limited, varying from 60 to 160 hours. These grants are protected by various provisions as to the length of the recitation period and the quality of the instruction.

Grants on examination are made for scholars who have received at least twenty lessons in each subject during the year, and are as follows:

(a) £3, £2, and £1 for an excellent, first class, and second class in drawing from life, modelling from life, or architectural design.

(b) £6 and £3 for a first and second class "in honors."

Grants will not be allowed for more than three such examination results for the same individual in any one year.

This system is much the same as that of the day schools, and has grown up gradually. It may well be questioned from the American standpoint whether it has been altogether beneficial in its results, and what the outcome will be we can not foretell. At present it seems absolutely necessary to the maintenance and support of continuation schools and technical education.

<sup>a</sup> Regulations for Technical Schools, etc., for 1906, Part I, sec. 12. (In N. U. T. Edition of Code, p. 95.)

<sup>b</sup> Ibid., Part I, Chap. II, arts. 25-34.

*Prizes and certificates.*<sup>a</sup>—Certificates are given to each student who successfully passes the examination in any subject. These are of two grades: The ordinary one for merely passing, and the honors certificate. Attendance certificates are also given to students who have attended at least twenty-five hours of instruction. Special certificates are given to those who have passed in the drawing subjects, in science, and in art. Certificates given by outside agencies, such as the city and guilds of London Institute, are also honored by the board.

Following the custom of the day schools, there is an elaborate system of prizes, medals, etc. Wyatt says, “It is absolutely necessary to give prizes in the evening schools.” This seems to be the general feeling, and one can well realize that it is so, especially when the prize system in the day school is considered. These prizes and awards are of various kinds—books, instruments, etc., medals, and scholarships. The prizes are awarded partly by the board, but mostly by outside agencies. For these there are often special examinations. In the year 1902–3 the value of the prizes given by the London school board was £860.

*Examinations.*—Examinations are given in all subjects. Previous to 1894 all students were examined by the Government inspector in the ordinary course of the examination of schools. Now, however, these examinations are given by a great variety of bodies.<sup>b</sup> In London, among the more important of these are the Institute of Bankers, the Chamber of Commerce, the city and guilds of London Institute, Cambridge University, and the school board. This has resulted from the complicated system of grants, prize scholarships, etc., now in vogue.

*Fees.*—The question of charging fees has been in a very unsettled condition, as is well illustrated by the history of the evening schools of London.<sup>c</sup> In 1882 a fee of 3d. per week, or 3s. per quarter, was charged. From 1884 to 1889 most schools charged from 1d. to 2d. per week. There was an extra charge for French and also for cookery. For a few weeks in 1888 and 1889 a fee of 1s. per week was charged for adults, but it was soon discontinued. In 1898 the schools were freed after several unsuccessful attempts. They remained free until 1902, when the management was changed, as was noted above. In the session of 1902–3 the schools were free to all under 16 years of age, to soldiers in uniform, and to the deaf. At present the fee for

<sup>a</sup> Regulations for Technical Schools, etc., for 1906, Part I, Chap. VI, articles 73–75.

<sup>b</sup> School Board of London, 1870–1904, p. 276.

<sup>c</sup> Ibid., p. 274.

ordinary schools is 1s. per session for those over 16 years, and it ranges up to 5s. per session for special subjects. The tendency is distinctly in favor (1) of charging fees for all evening students; (2) of making fees for those under 16 less than for those over that age; (3) of charging more for higher than for elementary subjects. It is found that a nominal fee is more likely to insure a good attendance. In the prefatory memorandum to the code for 1905 this statement of the attitude of the board is made:

The board have in the past few years exercised a certain amount of pressure in the direction of inducing managers to charge fees to students attending evening schools and classes, and the experience of these three years [1902-1905] has tended to confirm them in the view that a charge of the kind is in the best interests of education. They realize, however, that in a few of the rural districts, and in the poorer parts of some towns, the adoption of the fee-charging system requires to be introduced gradually, and, indeed, in a small number of cases is still unadvisable. They are prepared to consider upon its merits each case where it is proposed either to charge no fees at all or to remit the fees on a large scale.<sup>a</sup>

In Manchester, in order to induce the pupils completing the elementary school to begin at once attendance at the evening school, it was decided in 1904 to remit the fee to all such pupils. The increased attendance has amply justified the experiment and the plan has been continued.

*Hours of attendance.*—The usual number of evenings per week is three, but in certain cases four or even five evenings are given. The ordinary hours are from 7.30 to 9.30, but in the commercial schools and some others they are from 7 to 9.30. This interval is divided into two or in some cases into three periods. The session usually begins in the middle or latter part of September and lasts until the end of April. A small number of classes continue until the middle of July, but very little work of a solid character is done after the end of April. Many schools do not begin until the first of November.

In several places day classes are held, and are recognized by the education department as of equal rank with the evening classes. As was seen in Leeds, there is a definite movement on foot to provide part-time day classes for young apprentices. Arrangements are made with employers or masters by which the brighter apprentices are enabled to secure more thorough and systematic instruction in the day classes of the higher technical and industrial schools. The general tendency is well stated by Mr. Robert L. Morant, the secretary of the board of education, in the Prefatory Memorandum to the Regulations

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<sup>a</sup> *Regulations for Evening Schools, etc., 1905. Prefatory Memorandum. (N. U. T. Edition of Code of 1905, pp. 165-166.)*

for Technical Schools, Schools of Art, and Other Schools and Classes for Further Education, published by the board of education in 1906:

Year by year the evening school system is being more fully developed, and the schools are fulfilling an ever larger function in the supply of higher education, but it is now no longer the distinguishing feature of the branch of educational work which may be called "Further education" that it is carried on in the evening. In many cases employers find it possible to set their apprentices free in groups for instruction in school on certain mornings or afternoons weekly throughout the year or during certain seasons of the year; classes in domestic subjects meeting in the afternoon are found to suit the convenience of girls and women who are occupied in their homes during the evenings; winter courses in agricultural subjects for farmers' sons and vacation courses for teachers run continuously for several weeks of whole-day attendance; short local day courses in dairying and other rural industries are conducted by county instructors, and the development in recent years of facilities for specialized work of a high standard in technical institutions and schools of art has been a conspicuous sign of the increasing appreciation of the value of technical education. These higher centers of educational influence are now brought, by systems of bursaries and free admissions, within the reach of numerous students who, but for their previous evening school training, would have been unprepared to take full advantage of them. Indeed, not only has there been a marked advance in the volume and standard of the work carried on in day classes, but day and evening classes alike are being more and more fully organized as component and reciprocally helpful parts of one coherent scheme for further education.

The great problem in these schools is that of irregular attendance. The per cent of average attendance is estimated by Creasey to be below 60.<sup>a</sup>

Various methods which have been tried to secure more regular attendance have met with little or no success. Returning the whole or part of the fee, annual outings or social evenings during the session, lantern entertainments, and concerts, making the schools absolutely free are experiments which have only been successful in isolated instances. The lack of any real liking for study, of any desire to learn on the part of the students, and counter attractions have proved too strong.<sup>b</sup>

The personality of the teacher has very much to do with the regularity of attendance. Some authorities are strongly urging compulsory attendance for a certain length of time, up to 16 or 17 years. It is not probable that this will be done for some time.<sup>c</sup>

*Attendance.*—That these schools have in an increasing manner ministered to the needs of the people may be clearly seen by glancing at diagram 6 (p. 69), which shows the growth in the total attendance on the evening schools in England and Wales from 1890 to 1904. The sudden rise from 1893 to 1894 is due to the fact that in 1894 the grants were extended to those over 21 years of age. This diagram represents in only a partial way the increased facilities, for the schools have increased greatly in efficiency as well as in attendance.

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<sup>a</sup> Creasey: Technical Education in Evening Schools, p. 30.

<sup>b</sup> Ibid., p. 31.

<sup>c</sup> Ibid., pp. 35, 297.

In order to understand the place that the evening schools occupy and the function which they fulfill, it is necessary to consider briefly the general educational system of England and the extent to which existing day schools reach the people. This is a very complicated matter, owing to the impossibility of securing accurate data from the numerous schools to which the Government does not give grants, and any results given must be subject to some error.

7—

6—

5—

4—

3—

2—

1—

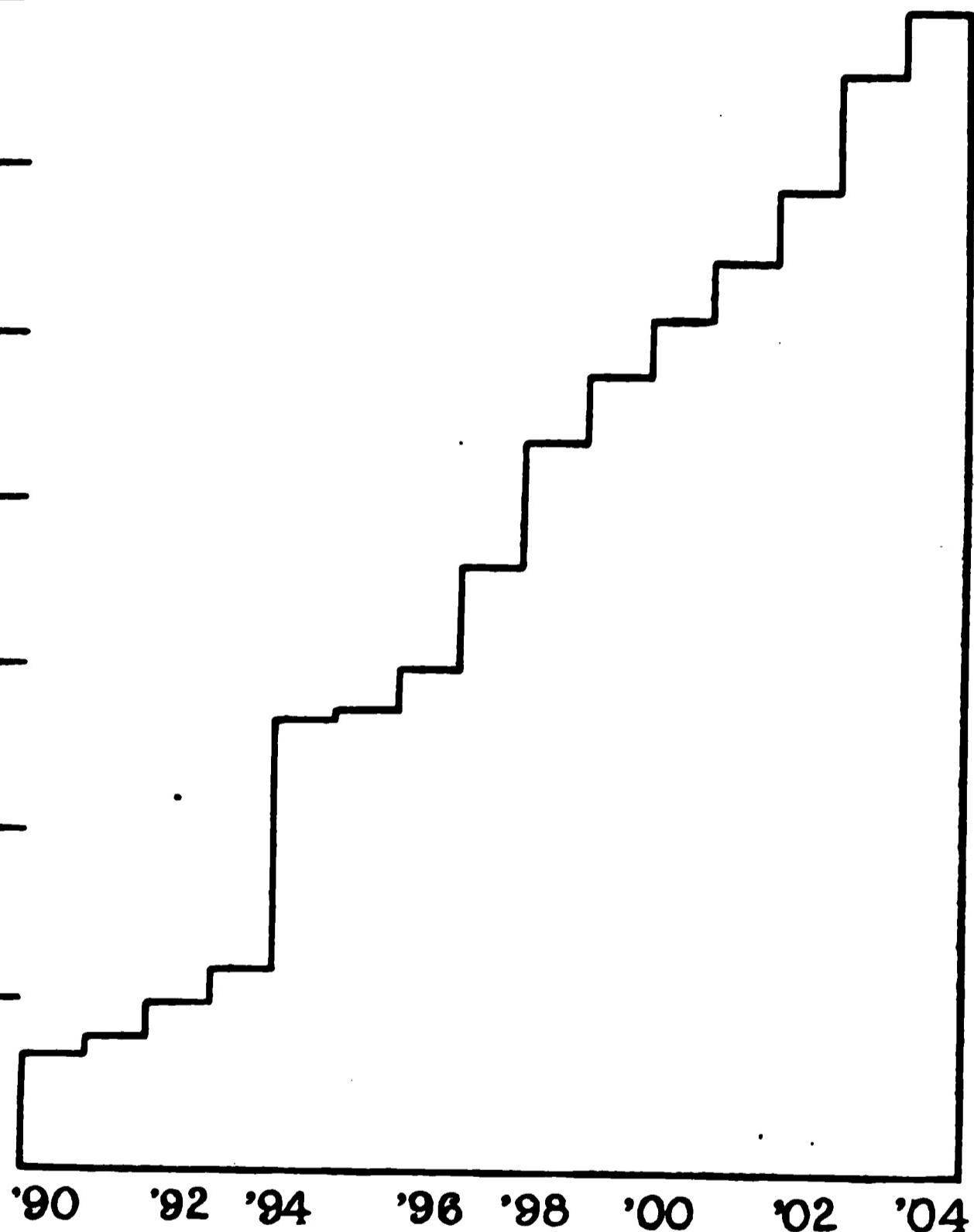


DIAGRAM 6.—Total attendance in the evening schools of England and Wales for each year from 1890 to 1904. The numbers at the left of the figure show the enrollment in thousands.

The statistics which form the basis for the tables and diagrams which are here given have been taken from the reports of the board of education of England for the most part. The estimated number of children up to 15 years, the number in the public elementary schools, and the number in the evening schools are from the same source.

The data for the secondary schools have been taken from the only available source—the voluntary census of 1897. No attempt has

been made to separate the real "secondary" from the other schools represented in this census, since this would be impossible, and for the present purpose it is unnecessary. Neither has any attempt been made to correct the figures given in 1897 for the "secondary" schools so as to make them more nearly represent conditions in 1900, for the reason that no satisfactory basis for such correction can be found. Undoubtedly there has been a large increase in the number attending the secondary schools which receive grants. Whether this has been attended by a like increase or by a falling off in the attendance on private, endowed, and other schools not receiving grants, or is partly due to the fact that some of these schools that had not previously received grants had come under the conditions of the grant, we do not know. It therefore seems better to leave the figures as they are, realizing that such a source of error exists. This is somewhat offset by the fact that in the statistics grouped under public elementary schools are included schools and institutions for deaf, blind, epileptic, and defective children. In these in 1904 there were under instruction 10,603 children, who would only partly offset the gain in the secondary pupils.

In addition to the pupils in the schools mentioned, there are also pupils in the day art classes and some day pupils in the schools of art; also the pupils in the day classes of the technical institutions and in the universities must be borne in mind. But all these taken together form so small a per cent of the whole number considered that it is hardly worth while to include them.

The first table (Table XVII) takes the estimated number of children 9 years old as a basis, and shows for four given years the per cent which the pupils in the public elementary schools at different ages are of this number.

TABLE XVII.—*Per cent of children in the public elementary schools at each year of age from 9 to 14.*

Year	Between 9 and 14 years of age						15 and over.
	9.	10.	11.	12.	13.	14.	
1897 ..	80.0	85.0	81.0	69.5	29.0	7.0	1.0
1899 ..	85.0	84.0	81.5	70.5	30.0	7.0	1.0
1900 ..	84.0	83.0	80.0	71.0	30.0	6.5	1.1
1902 ..	93.0	91.0	87.0	81.0	47.0	8.0	1.1
Medians ..	85.5	84.5	81.5	71.0	30.0	7.0	1.1

This shows that the children remain in school fairly well until the twelfth year, when they drop out very rapidly, only 30 per cent being in school at 13 and only 7 per cent at 14. As far as the elementary

schools are concerned, then, very little education is given after the fourteenth year. It must be noted that there is a distinct increase in the proportion of children in school from 1899 to 1902, indicating a definite attempt to remedy this great elimination.

The term "Public elementary schools" includes the elementary, the certified efficient, and the higher grade elementary schools, as well as those for the blind, deaf, and defective.

It is necessary next to consider the pupils in day schools other than the public elementary schools. As has been said, no one term will cover the various schools represented here. Many are doing elementary work, while some go beyond what is ordinarily called the secondary grade. The statistics collected in the voluntary census of 1897 undoubtedly represent the great majority of schools other than public elementary schools. Great care was taken in sending out requests for information, and it is certain that all the larger schools responded and nearly all the smaller ones. It should be said, however, that they represent only England, excluding Monmouthshire, while those for the elementary and evening schools represent Wales and Monmouthshire. The addition of the records for these two territorial divisions, were they obtainable, would not materially affect the result.

The number of pupils in other than public elementary day schools in England (excluding Monmouthshire) in 1897, expressed as per cent of total number of children 9 years old, was as follows:<sup>a</sup>

TABLE XVIII.—*Per cent of children in day schools other than public elementary.*

Age.	Per cent.	Age.	Per cent.
9 years .....	2.8	15 years.....	3.9
10 years .....	3.3	16 years.....	2.3
11 years .....	3.8	17 years.....	1.2
12 years .....	4.5	18 years.....	0.5
13 years .....	5.5	19 years.....	0.2
14 years .....	5.3		

Estimating the number in Wales and Monmouthshire, and correcting for 1900, the outside limit is as follows:

Age.	Per cent.	Age.	Per cent.
9 years .....	4.3	15 years.....	6.3
10 years .....	5.0	16 years.....	3.6
11 years .....	5.7	17 years.....	1.8
12 years .....	7.0	18 years.....	0.77
13 years .....	8.6	19 years.....	0.3
14 years .....	8.2		

<sup>a</sup> Based on voluntary census of 1897. Parliamentary Papers, 1897, Vol. LXX, C. 8634.

We now come to the evening schools. Table XIX represents records for three years, and shows clearly the extent and place of their work. They begin with the twelfth year and reach their maximum at the fourteenth year, and have their greatest influence during the years of 13 to 20. After the fourteenth year they are practically the only means of education for the people.

TABLE XIX.—*Per cent of young people in evening schools at various years of age.*

Year.	Under 13.	Between 13 and 20 years of age.							21 and over.
		13.	14.	15.	16.	17.	18.	19.	
1869	2.0	7.2	12.7	11.0	8.5	6.6	4.0	2.8	2.0
1900	1.5	7.8	13.0	12.0	9.0	6.2	4.3	3.1	2.8
1902	1.0	7.3	15.0	13.6	10.7	7.8	5.2	3.5	2.7
Medians	1.5	7.3	13.0	12.0	9.0	6.0	4.8	3.0	2.8
									11.0

The total extent to which the people are reached is shown graphically by diagram 7. The number living is, up to the year 14, taken from the records of the school board, and, while estimated, it is undoubtedly a very close estimate. After the age of 14 the line follows the usual "death rate," and exaggerates rather than minimizes the elimination by death.

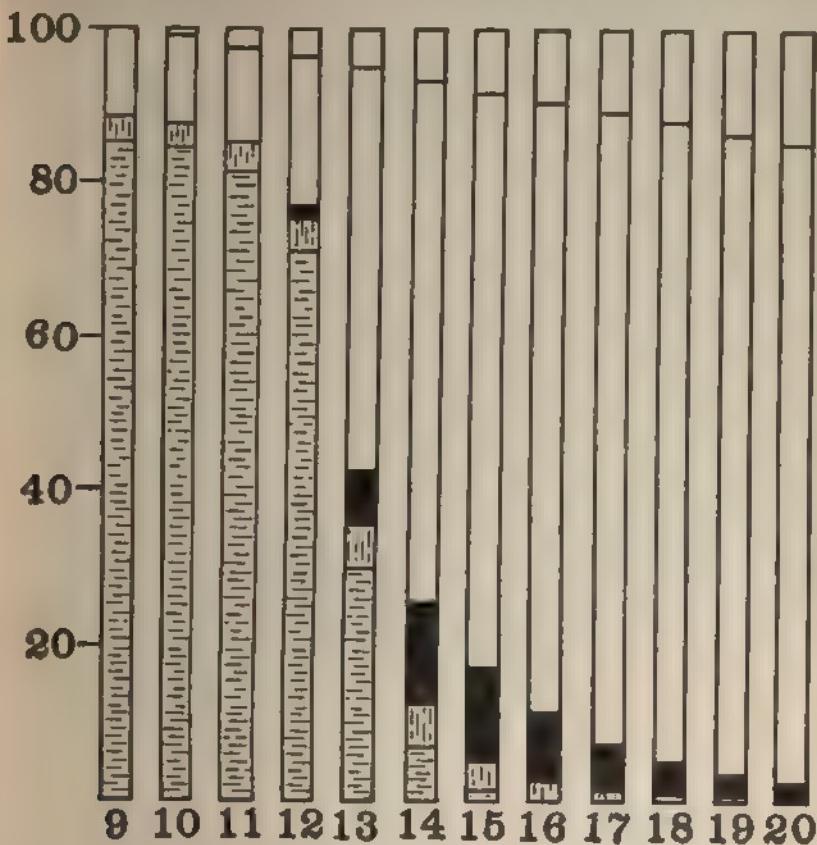
The ages of evening school pupils are shown in Table XX.

TABLE XX.—*Age distribution of pupils in English evening schools, expressed in percentage of total attendance.*

Year.	Under 13.	Between 13 and 20 years of age.							21 and over.
		13.	14.	15.	16.	17.	18.	19.	
1899	2.9	11.0	19.5	16.9	13.0	8.7	6.2	4.2	3.2
1900	2.1	10.6	18.8	17.1	12.9	8.9	6.2	4.4	3.4
1901	1.2	9.1	19.0	17.1	13.5	9.2	6.5	4.4	3.4
Medians	2.1	10.6	19.0	17.1	18.0	8.9	6.2	4.4	3.4
									15.6

Table XX, taken in connection with diagram 8, indicates clearly the general distribution. The maximum attendance is at the fourteenth year and decreases somewhat rapidly after that. Over 80 per cent of the pupils in the evening schools are under 21 years old. These schools are, then, as in Germany and as with us, schools for young people. It is worthy of note that there is an almost continuous decrease in the per cent of pupils below 15, and a corresponding increase in those over 21, while the proportion of those between 15 and 21 increases slightly. This decrease in the proportion of evening school pupils below 15 is coincident with the increase in the proportion of

children 12 to 15 years old in the elementary schools noted above (Table XVII).



- *Evening Continuation Schools*
- *Private and Secondary Schools*
- *Public Elementary Schools*

DIAGRAM 7. Enrollment in schools of different kinds in England and Wales, expressed as per cent of the estimated number of young persons 9 years old. It is based on Tables XVII, XVIII and XIX. Each column represents the per cent of the enrollment at a given age on the estimated number of young persons 9 years old. The lines at the top show the elimination by death. The total number living at each age would thus be shown by the length of the column up to this "death-line."

The proportion of evening pupils from 12 to 15 is much greater in the large centers of population and industry than in the country as a whole. In London and Manchester the per cent was as follows:

	12 to 15 years.	15 to 21 years.	21 years and over.
London:			
1901.....	37.5	39.0	22.5
1903.....	44.0	33.5	22.5
Manchester:			
1900.....	38.6	46.0	15.4
1903.....	41.5	35.5	23.0

In both cities the proportion below 15 increased between the years given, while in the case of London the proportion below 21 remained practically the same. It will be seen, also, that in 1903 the proportions below 21 and above it were almost exactly the same for the two cities.

It is clearly seen from this brief review of the situation what an exceedingly important function the evening schools perform. They furnish practically the only education to the great majority of the English people after the fourteenth year. In London the school board reported that, in 1902, 15 per cent of the population between the ages of 15 and 21 were enrolled in the evening schools. This is a creditable showing as far as the evening schools are concerned, but still leaves

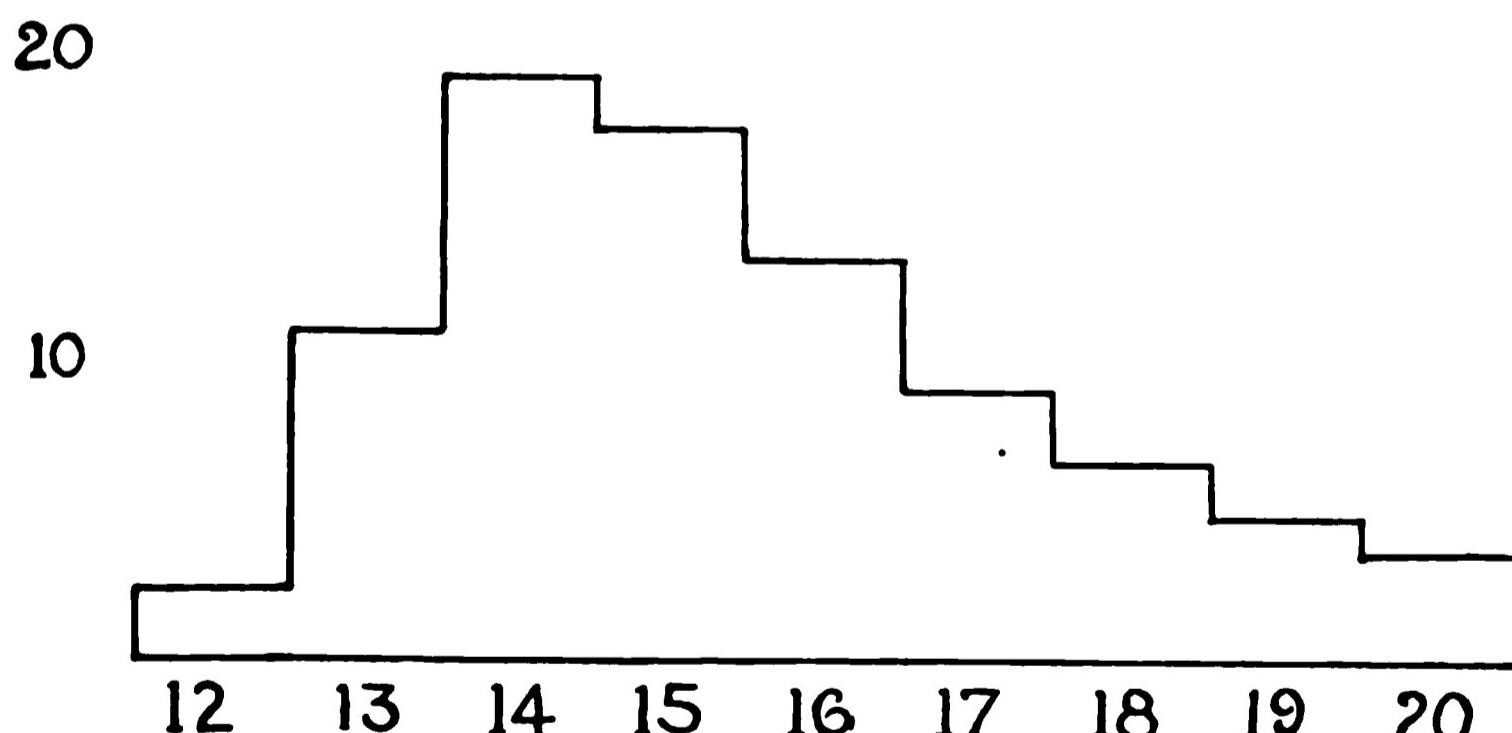


DIAGRAM 8.—Age distribution of pupils in English evening schools between the ages of 12 and 20 years. Based on Table XX.

fully three-fourths of the people between those ages not enrolled in any school. The present educational conflict in England will undoubtedly result in greatly increased facilities for the education of the young in day schools and will to some extent relieve the condition shown by the statistics given above. The evening schools, however, will also increase in efficiency and minister more fully than now to the needs of the young working people.

*Social life.*—One great feature of the work of the evening schools is, that "each school is, for the most part, a little center of life and civilization, and not merely a collection of classes."

One advantage of this work is that it helps to develop the feeling of coherence and the spirit of democracy. Social gatherings are allowed in the London evening school rooms once a month on evenings when the school is not in session. No fee is charged for this. These schools are, in a measure, the social clubs of the common people, and are of very great influence and importance. Indeed, so much is made of this feature in places that it has called out such severe criticism as that of Sir John Gorst, who, in an address previous to the passage of the act of 1902, said, "In the evening schools an increasing number dance and swim and gaze at magic lanterns; a decreasing number avail themselves of the opportunity for real study. As a plan of giving innocent recreation to the masses, the system of evening schools has been a success; as a means of making up the terrible deficiencies of our people in commercial and technical capacity, it is a failure." This criticism is, however, not applicable to so great a degree now as then.

*Teachers.* The teachers are appointed at each session, and are mostly chosen from the assistant teachers of the day schools. Where evening instruction is given in connection with technical schools and universities, the regular staff also conduct the evening work. The classes in shorthand, bookkeeping, and other special subjects are often taught by men engaged in corresponding work during the day. In some places master workmen are employed for the practical instruction. The proportion of men teachers is greater than that of women. As these schools become specialized, it becomes increasingly difficult for the ordinary day school teacher to minister successfully to the needs of the pupils. Special training is already demanded in many places and the demand will increase. The salaries are from 4s. to 16s. per evening, with extra remuneration based on the average attendance.

In Montrose, Mr. Strong's method of obtaining teachers is worthy of note. One principal difficulty has been in securing teachers who understand both the practical and the theoretical sides of the work. Being unable to secure such a teacher for his class in plumbing with the salary available, he effected a combination by which the theoretical side was given by the regular day teacher of science, while the practical side was given by a master plumber. In order to secure the cooperation of the plumbers in the city, and at the same time secure the best man for the work, Mr. Strong called a meeting of all the

"Report of the London School Board on Evening Continuation Schools for 1903, p. 60.

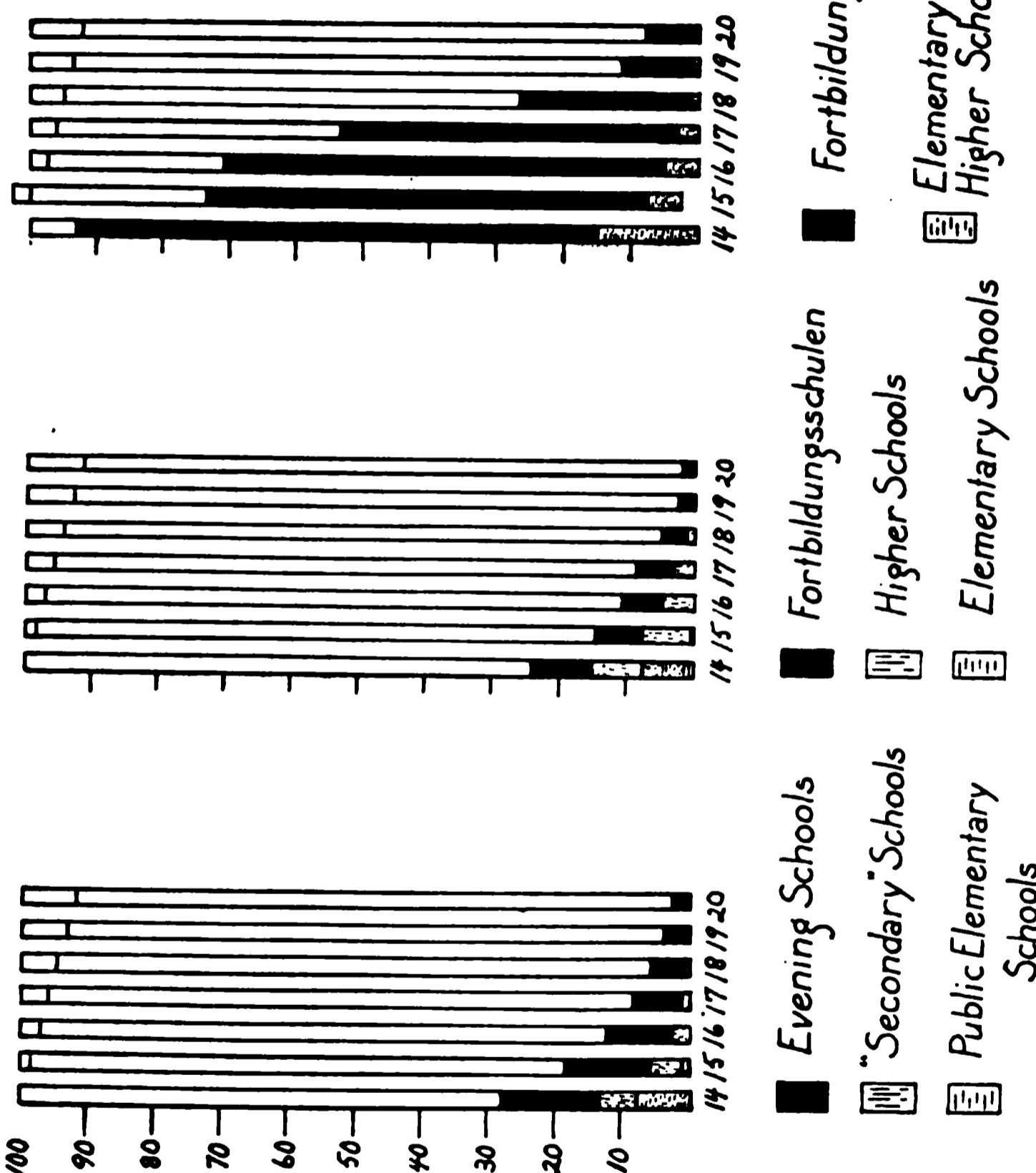
master plumbers, explained what he wished to accomplish in the plumbing class, and then asked them to recommend some one of their number for the place. This they did, and the one recommended was appointed. The same plan will be adopted in the case of the cabinet-makers. None but apprenticed boys are admitted. In the plumbing class, all apprenticed plumbers in the city attend. By careful cooperation between the theoretical and practical teachers and the director the work is unified. The object for which Mr. Strong is working is of course a combination of the two elements in a single teacher, but the cooperation of the two teachers forms a very fitting transitional stage; for it not only overcomes the initial difficulty of establishing the system, but it secures the cooperation of the master workmen at the very beginning of the undertaking.

*Advertising.*—Every effort is made to attract pupils to the evening schools. This is done by the system of prizes and scholarships and by actual advertising. In London the schools are extensively advertised, both by posters and in the newspapers. Lists of pupils are also sent to the evening school-teachers, who send letters of invitation and prospectuses of the work to such as would naturally come to their schools. The day school-teachers are retained in the evening schools of the same district with the purpose of holding their boys after they leave the day school. Another method is that of the public distribution of prizes and scholarships.

From the foregoing outline it is evident that, while the English evening continuation school system is not so definite nor so well articulated with the general educational system as that in Germany, it is more widely diffused, and perhaps reaches more of the people. It is of the greatest importance in the education of the poorer classes. The purpose of these schools is not to supersede the training of the workshop, but merely to supplement it. The schools, even where they are the most completely industrial in character, aim only to supply what the shops do not give and keep the student abreast of the latest developments of invention and of the applications of science to his trade. There is somewhat more shopwork given than in the German schools, but this is for the distinct purpose of clinching the instruction given in the classes. While the emphasis in many of these schools is distinctly on the industrial side, and must so be, this is not the main purpose. The aim is, "By giving the student what is useful to develop what is fine." The method of reaching the student is through his interests, but the instruction aims to develop character, to make better citizens, who will see their relations to the community and to the State and recognize their responsibilities as citizens.

## C. STATISTICAL COMPARISON WITH CONDITIONS IN THE UNITED STATES.

The following graphic representation (diagrams 9-15) shows clearly something of the relative part which the different classes of schools play in the education of the young people in the countries and cities there considered. Each column represents the per cent of pupils

DIAGRAM 11.—  
Württemberg (rough estimate).DIAGRAM 10.—  
Prussia.DIAGRAM 9.—  
England.

DIAGRAMS 9-11... Percentage of pupils of various ages in different classes of schools in England, Prussia, and Württemberg.

school 12.5 per cent. About 3 per cent are not enrolled in any of these schools." All the other columns would be read in the same way. No death line elimination is given for the reason that in the cities,

DIAGRAM 12 Sixteen cities of the United States

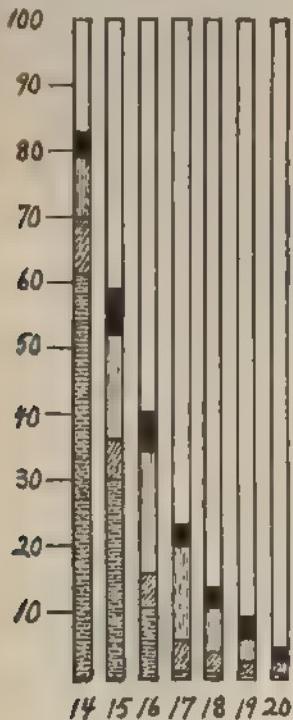
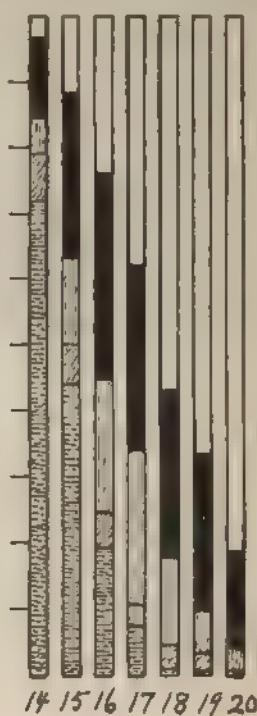


DIAGRAM 13 Springfield, Mass.



- Evening Schools
- ▨ Public Secondary Schools
- ▨ Private and Parochial Schools
- ▨ Public Elementary Schools

DIAGRAMS 12 and 13. Percentage of pupils of various ages in different classes of schools in 16 cities and in Springfield, Mass.

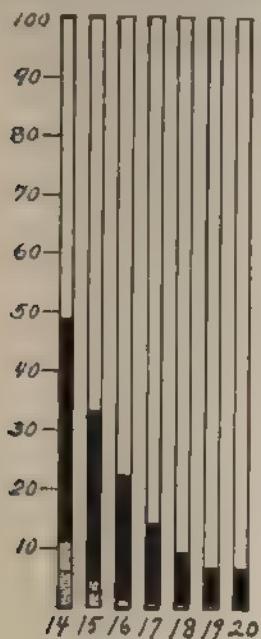
as has been mentioned before, the estimated number of persons at each age from 15 to 20 years is more than that for 14 years old.

The statistics for England are found on pages 70, 71, 72, those for Prussia on page 50, and those for the sixteen selected cities and Springfield on pages 16, 20, 24.

The statistics for Manchester and Berlin are given below. They are all for the year 1904, and are accurate in regard to enrollment. The Manchester statistics are taken from the Report of the Education Committee of Manchester for the year 1903-4. In that report the evening school pupils are given by age groups only, but they have been distributed according to the complete returns in the report for

DIAGRAM 14.—Manchester, England

DIAGRAM 15.—Berlin, Germany.



■ Evening Schools

□ "Secondary" Schools

▨ Elementary Schools

■ Fortbildungsschulen

▨ Boys Secondary Schools

▨ Intermediate and Girls Higher Schools

▨ Elementary Schools

DIAGRAMS 14 and 15. Percentage of pupils of various ages in different classes of schools in Manchester, England, and Berlin, Germany.

1900. The total number of persons 14 years old was estimated as carefully as possible. The census of 1891, which gives the population by age groups, was taken as a basis. The group from 10 to 14 years old was taken and increased in the same proportion as the increase in population to 1904. The number 14 years old was then cal-

culated, taking the estimated number 10 to 14 years old given by ages.

The Berlin statistics are from the *Statistisches Jahrbuch der Stadt Berlin* for 1904. In this, complete age statistics are given for all the public and private higher, intermediate, and elementary schools up to the sixteenth year, and for the Gymnasium, Realgymnasium, and Oberrealschule up to the twenty-first year. With these latter as a basis, the pupils of the other schools have been distributed. The pupils in the Fortbildungsschulen have been distributed according to the method employed on pages 47-48 for distribution of the pupils in Prussia. The estimated number 14 years old was found by taking the age group 10 to 14, given in the *Jahrbuch*, and distributing it according to the age statistics given by a previous census.

TABLE XXI.—*School attendance, by ages, in Manchester (England) and Berlin, and per cent at each of the number of children 14 years old.*

MANCHESTER.

	Between 14 and 20 years of age.						
	14.	15.	16.	17.	18.	19.	20.
Public elementary schools:							
Number .....	878	270	.....	.....	.....	.....	.....
Per cent .....	6.5	2.0	.....	.....	.....	.....	.....
Secondary and private schools:							
Number .....	642	359	175	99	38	11	0
Per cent .....	4.8	2.7	1.3	0.7	0.3	0.1	0
Evening schools:							
Number .....	5,038	3,772	2,829	1,832	1,174	849	903
Per cent .....	37.3	27.9	20.9	13.5	8.7	6.2	6.7

BERLIN.

Elementary schools:	6,645	97	29	5	.....	.....	.....
Number .....	21.7	0.3	0.1	0	.....	.....	.....
Middle and girls' higher schools:	2,143	733	644	520	221	.....	.....
Number .....	7.0	2.4	2.1	1.7	0.7	.....	.....
Boys' secondary schools:	2,626	1,783	1,591	1,350	968	348	128
Number .....	8.6	5.8	5.2	4.4	3.2	1.2	0.4
Fortbildungsschulen:	10,380	9,965	8,820	6,748	3,321	1,350	934
Number .....	33.8	32.5	28.7	22.0	10.8	4.4	3.0

The statistics for the elementary, intermediate, and secondary schools in Wurtemberg have been very roughly estimated and grouped together, while the pupils in the Fortbildungsschulen have been distributed according to the age statistics given above. The only reason for the introduction of Wurtemberg here is to show the extent to which that State leads the world in this particular type of school.

A comparison of the columns representing England, Prussia, and Wurtemberg reveals in a striking manner their educational differences. Up to the age of 14, as already shown, practically all chil-

dren in Prussia are in school, and nearly all in England. Beginning with the fourteenth year, however, less than 15 per cent are in elementary and secondary day schools. The resemblance between the two countries is striking up to the sixteenth year. Prussia holds her young people in the secondary schools for a longer period than does England. England has a larger percentage of pupils in the evening schools than Prussia, but far less than Wurttemberg.

Care must be taken in interpreting statistics of any kind, especially those of foreign countries. Especial care must be exercised here, because these statistics take no account of the trade schools of Prussia and Wurttemberg. The comparison merely shows the relative place in the different countries of the particular types of school mentioned.

It is to be regretted that there are no reliable statistics of the entire United States which we can place beside those of England and Prussia. The columns for the sixteen selected cities do not represent the country as a whole, of course, and so are not comparable with those for the countries here shown.

The columns representing the cities (diagrams 12-15) are more nearly comparable. Here certain clearly defined differences appear. As we would expect, Berlin is far ahead of Prussia, both in relative number enrolled in elementary and higher schools and in continuation schools. Manchester is not so far ahead of England as Berlin is ahead of Prussia. It is, however, when we come to compare the cities of the United States with Manchester and Berlin that the most striking differences appear. The sixteen cities collectively, and Springfield in particular, hold a very much greater proportion of their young people in the elementary and secondary schools than do Manchester and Berlin. In fact, the proportionate number of pupils in the elementary and secondary schools of the sixteen cities of the United States studied, taken as a whole, is greater at most ages than the proportionate number enrolled in the elementary, intermediate, secondary, and continuation schools all put together in Berlin. This must not be taken to be more than a quantitative statement of the schools under consideration. There are in Berlin a large number of young people, something over 15,000, in trade schools, which are not shown in the statistics given, in addition to those in technical schools, schools for masters, etc., which would materially increase the proportion. It would seem to be true, then, that the number and probably to a large extent the class of young people that are in the trade and continuation schools of Berlin are with us found in the elementary and secondary schools. This may or may not be a cause for congratulation on our part. The question naturally arises, if the young people in this country who are found in our day schools do repre-

sent to a large extent the class found in the Berlin trade and continuation schools, are we giving them as good a start, are we helping them in the way of making a living, of becoming self-supporting, self-respecting, intelligent citizens, to as great an extent as is Berlin? At the same time, it also points the way to the splendid opportunity which America has. We have a comparatively large number of pupils in school during this period of life. The question, then, becomes one of adapting the schools which we have more nearly to the needs of the young people. It suggests also that our problem of the continuation school is not quite the same as that of England or Germany.

It is interesting to note that in Springfield, which probably represents the high-water mark in the development of evening schools in this country, there are more pupils proportionately in the evening schools at most ages than in Berlin or Manchester. This is especially noticeable from the years 17 to 20. But the columns representing the medians of the sixteen cities indicate that in most of our cities as regards evening schools we are much below the standard set by the larger English and German cities.

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#### IV. DIFFERENT TYPES OF CONTINUATION SCHOOL.

There are, perhaps, three or four general types of continuation school in the United States which are fairly well defined: The evening school, the educational classes of the Young Men's and the Young Women's Christian associations, together with the educational work conducted under the direction of Roman Catholic, Hebrew, and other religious societies of similar educational character, and the correspondence school. The general purpose of these and the character of their work are described in the following pages. But when we go beyond these we find so many different kinds of school and such a variety of work done that it is impossible to classify them fully or even to name them all. The attempt made is rather to describe carefully a few of these institutions which represent the better work and show the tendencies of the day. Most of those chosen are located in New York City. These are selected because it has been possible to make a personal examination of their work. They are classed under special schools and schools for apprentices and employees. The special schools are more or less philanthropic in their character and represent very different types of work. The following examples are here described:

1. Cooper Union.
2. Mechanics Institute of New York City.
3. Pratt Institute.

The schools for apprentices and employees are somewhat different in purpose and methods from those already mentioned. The examples chosen are:

1. Chicago School for Apprentices.
2. Cooperative Engineering Courses of the University of Cincinnati.
3. School for Apprentices of the General Electric Company, of Lynn, Mass.
4. School of R. Hoe & Co., New York City.
5. Schools for clerks of John Wanamaker, of Philadelphia, and Sears, Roebuck & Co., of Chicago.

#### A. EVENING SCHOOLS.

There is no other educational agency which to-day is reaching so large a part of the working people as the public evening schools. Their development, especially during the past quarter century, has been very rapid, and they seem destined to be, for some time to come, if not permanently, the great means of education for the working people. They are reflecting more nearly the needs of the people than ever before and, in doing this, are coming to have characteristics so different from those of the day schools that they are attaining a distinct place in the educational system.

*Historical.*—The early history of the evening schools in this country is so obscure, so little that is reliable has been written in regard to it, that some of the more prominent features of their early development will be given at this place.

We may roughly divide the history of these schools into three periods:

I. Private schools kept in the evening for pay. These were the same in character as the day schools and were merely a development of the tutorial system. This period extends from early colonial times to about the third decade of the nineteenth century. These schools are significant because (1) they reached a certain class of people—apprentices and others not otherwise provided for; (2) they accustomed the people to the idea of schools in the evening; and (3) they drew attention to the fact that many who were at work needed and desired further education.

II. Free evening schools established by benevolent societies for the benefit of the poor. The limits of this period are indefinite. There are traces of it even in the early part of the eighteenth century in the schools for slaves, but it may be said properly to have extended from 1820 to 1840 or 1850. It was the same general movement which introduced the Sunday school in 1791, and later, and which in New York and Philadelphia brought about the establishment of free public schools. This period extends to the time when evening schools were established and conducted by the public school authorities. This time is of course different for different cities.

III. Free public evening schools. This period begins with their establishment by the public school authorities and continues to the present time.

This sketch will be confined largely to the first two periods, for the reason that these are the periods about which so little has been written.

#### I. PRIVATE EVENING SCHOOLS.

*New York.*—The first mention of evening schools that I have found is in the agreement with a teacher for Flatbush in 1681. This was a school conducted under the direction of the Dutch Church, and supported partly by tuition fees and partly by a general appropriation. The teacher was Jan Tiebaut. That there was an evening session as well as one in the morning and one in the afternoon is shown (1) by a specific reference to the conduct of the three sessions, and (2) by the regulations in regard to the tuition fees of the day school and of the evening school.<sup>a</sup> A similar agreement was entered into the next year. It is possible that the evening session was recognized as a regular part of the work of this school for some time previous to this agreement, for the school had been in existence since 1650.

The first private evening school mentioned in the records for New York City is that taught or proposed to be taught by James Lyde in the custom-house in September, 1730. It was a "mathematical" school, and included such subjects as "arithmetic in all its parts, geometry, trigonometry, navigation, surveying, gauging, algebra, and sundry other parts of mathematical learning."<sup>b</sup> Private evening schools seem to have had their greatest development in the beginning of the nineteenth century. In 1823 the Public School Society passed a resolution permitting their teachers to hold evening schools in the school buildings at their own expense. These were not free schools, tuition fees being charged.

*New England.*—In New England the first mention found of a private evening school was a notice in the Boston News Letter of one kept by Mr. Samuel Granger, in Boston, in 1724. He taught "writing, accounts, and the mathematics."<sup>c</sup> From 1750, at least, there are evidences that private schools where instruction was given in the evening were not at all uncommon. Scattered notices in the town records and the selectmen's minutes of Boston and Salem refer directly to such schools, and other indirect references are found. These schools were especially common from 1780 to 1815 or 1820. In Dorchester a school for apprentices in the paper mills and "other studiously inclined boys" was kept by Samuel Crane from 1790 to 1797.

<sup>a</sup> Daniel J. Pratt: *Annals of Public Education in New York*, p. 67.

<sup>b</sup> Ibid., p. 123. (Advertisement in *New York Gazette*, Aug. 31–Sept. 7, 1730.)

<sup>c</sup> Drake: *History and Antiquities of Boston*, p. 596.

He also kept a day school. There is no indication whether tuition fees were charged or not, but it was probably not a free school.<sup>a</sup>

*Pennsylvania.*—There is a record of an evening school in Germantown in 1702, which was kept by the learned Pastorius "for such as could not attend the day school." This was continued for several years.<sup>b</sup> A night school is mentioned as having been conducted in Philadelphia in 1751, in which, besides the ordinary subjects, "geometry, navigation, and mensuration" were taught.<sup>c</sup>

From these references it seems altogether probable that private evening schools were quite common in New England, New York, and Pennsylvania, at least during the latter part of the eighteenth century and up to 1820. Some of these were for apprentices and all were for working people. Very early in the nineteenth century, then, the idea of evening instruction was a familiar one, and the fact that there were many who needed such training was known. Public school buildings were in several instances used for this purpose, and the people seemed to realize somewhat the importance of such training.

## II. FREE EVENING SCHOOLS FOUNDED BY BENEVOLENT SOCIETIES.

*Schools for slaves.*—Probably the first free evening schools in the country were established for slaves and other negroes by the Society for the Propagation of the Gospel. One of these was started in Staten Island in 1715. From that time on others were conducted both in Staten Island and New York.<sup>d</sup> In 1787 the Manumission Society also maintained schools for negroes in New York.

In Philadelphia work among the negroes was prosecuted largely by the Society of Friends. In 1789 the Society for the Free Instruction of the Black People conducted an evening school for adult negroes. This school continued with some interruption up to 1835 or later. Other societies of Friends established schools of the same kind.<sup>e</sup> The success of these schools undoubtedly had an influence on the opening of free evening schools for whites. In some cases the same societies conducted evening schools for adult whites and adult negroes.

*New England.*—In Salem, in 1774, there was a school conducted under the charge of the selectmen and paid for out of the interest on money previously given for the support of schools or for the tuition of poor children. In this school 12 boys were to be instructed

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<sup>a</sup> A. W. Brayley: Schools and School Boys of Old Boston, p. 24.

<sup>b</sup> Wickersham: History of Education in Pennsylvania, p. 222.

<sup>c</sup> Ibid, p. 278.

<sup>d</sup> Daniel J. Pratt: Annals of Public Education in New York, pp. 98, 112.

<sup>e</sup> Wickersham: History of Education in Pennsylvania, p. 251.

free of charge on three evenings of the week.<sup>a</sup> This, so far as I have been able to find, was the first evening school which was in any way connected with the public schools and supported by funds which could be called public money or school money. It will be noted, however, that even this was more an affair of charity than an attempt to establish free evening schools for all boys who were at work.

The beginning of the real philanthropic movement in Boston and Salem seems to have been about 1810 or a little later. In 1814 and 1815, two charitable schools for girls were founded by an association of young women in Salem. In 1816 Sunday schools were first introduced in Boston, and for a time these gave instruction to poor boys and girls in reading and writing. These, while not evening schools, served to call the attention of the public to the need of instruction for boys and girls at work. Very soon serious objection was made to such secular instruction on the Sabbath and other time had to be found for it. It is probable that this helped to pave the way for evening schools later.

In 1823 the selectmen aided the cause of evening schools by appropriating \$75 for such a school for young men over 15 years old. Mr. Hood was the teacher.<sup>b</sup> There is nothing to indicate that this was considered in any way a part of the school system. It was merely helping along an effort that was considered worthy. From this time up to the time when evening schools were formally established such work was mainly conducted by philanthropic and religious agencies. In 1836 Warner Street Chapel in Boston opened a free evening school which continued for twenty years at least, and was very successful. Several other schools were conducted by religious agencies during the same period. In 1856 the number in attendance on these schools was not far from 2,500. During a part of this time at least (the exact time could not be definitely ascertained) the city gave half the proceeds from the city hay scales to these schools. This amounted to about \$1,200 per annum.<sup>c</sup> In Cambridge the school committee assumed the expense of warming the rooms, while all other expenses were borne by individuals. In Salem the city missionary provided free evening instruction in 1847, and the next year a number of people contributed to its support. This school continued for some years and received a contribution of \$300 from the city treasury in 1850. In 1854 the school was maintained one year at the charge of the city, but seems to have been given up after that time.<sup>d</sup>

<sup>a</sup> J. B. Felt: *Annals of Salem*, Vol. I, p. 452.

<sup>b</sup> Ibid., Vol. I, p. 471.

<sup>c</sup> Twenty-fifth Report of the Mass. Board of Education, 1861, pp. 76-77.

<sup>d</sup> Osgood and Batchelder: *Historical Sketch of Salem*, pp. 106-107.

By an act of the legislature of Massachusetts approved March 29, 1847, permission was given to cities and towns to appropriate money for the support of schools for the instruction of adults in reading, writing, English grammar, arithmetic, and geography.<sup>a</sup> In this act no mention is made of the time of day when such instruction should be given, and there is nothing to indicate whether it was intended to apply this to evening schools or not. It is evident that the city authorities of New Bedford thought that it did so apply, for in December, 1848, two evening schools for adults were opened, after a thorough canvass of the situation by a special committee. Money was appropriated for these schools from the regular funds.<sup>b</sup> Worcester opened three evening schools in 1849, which were also supported by public money.

The experience of Lowell, however, shows that the act in question did not completely establish the legality of the expenditure of public money for evening schools. In 1851 the city council of Lowell appropriated \$50 to aid the city missionary association in maintaining evening schools. Similar appropriations were made for several years, and in 1855 the sum of \$500 was appropriated for the support of these schools. The opposition to this was so strong that an injunction of the supreme court was obtained, which stayed the payment of the money appropriated.<sup>c</sup> The matter was definitely settled in 1857, when an act of the legislature formally authorized the payment of money for the maintenance of evening schools.

It was some years before the attempts to establish them in Boston and Salem were successful. In Boston six schools were opened under the charge of a special committee in 1868, and the next year they were formally incorporated into the school system.<sup>d</sup> In Salem the evening schools were finally taken over by the city in 1869.<sup>e</sup> The history of the movement in Boston and Salem is largely duplicated in the other cities of New England. In nearly all cases the schools were first conducted by religious or philanthropic agencies, then aided by special appropriations from the city, and finally taken over by the city. The dates when these schools were first made a part of the school system are here given for some of the more important cities: Providence, R. I., 1849; Springfield, about 1850; Fall River, 1858; Lawrence and Lowell, 1857.<sup>f</sup>

*Pennsylvania.* The first indication of this movement in Pennsylvania might be said to be in the industrial evening school con-

<sup>a</sup> General and Special Statutes of Massachusetts, 1847, chap. 137.

<sup>b</sup> School Report, New Bedford, Massachusetts, 1848-49, p. 14.

<sup>c</sup> Evening Schools of Lowell, Massachusetts, 1903.

<sup>d</sup> Report of Boston School Committee, 1868 and 1869.

<sup>e</sup> Osgood and Batchelder Historical Sketch of Salem, p. 107.

<sup>f</sup> Twenty-fifth Report of Massachusetts Board of Education, 1861, pp. 78-86.

ducted by the Moravians at Litiz, in 1754. Here boys who were employed during the day were taught "some useful knowledge" three evenings a week.<sup>a</sup>

In 1799 the young men who afterwards founded the Philadelphia Society for the Establishment and Support of Charity Schools conducted evening classes for apprentices, clerks, and others.<sup>b</sup> It is evident from this account that some young ladies were also conducting some sort of evening schools among the poor at the same time. The schools for adult negroes and whites have been mentioned already, and it is probable that other societies had schools for whites as well as negroes.

About 1847 the Missionary Society of the Church of the Atonement, in Philadelphia, conducted the Logan Evening School. This had in 1850 an enrollment of 216.<sup>c</sup> In 1850 the city appropriated \$2,000 for the establishment and support of free evening schools, and from that time they have been conducted by the city.<sup>d</sup>

*New York.*—The beginning of the philanthropic movement in New York dates from about 1830. The records of the Public School Society show numerous requests for the use of the public school buildings for free evening schools. These requests came from private citizens and associations of men. In nearly every case they were granted.<sup>e</sup> The need for such schools was so great that soon after, in 1833, the Public School Society undertook the work, and opened four schools for apprentices and others. They were quite successful and were conducted for several years thereafter. But owing to the fact that the day school teachers were required to teach the evening classes also and without additional pay, there were lack of interest and considerable objection on the part of the teachers. There was also some doubt about the right to expend public money for such schools, and in consequence they were discontinued. These schools were free and quasi public; the money used for their support was taken from the general fund of the society, which was made up in part of public money and in part of gifts and bequests.<sup>f</sup> After this time there seem to be no records of evening schools until 1847. They may have been continued, supported by philanthropic agencies.

In 1847, at the urgent solicitation of the board of education, the legislature passed a law empowering the board to conduct evening schools for males and authorizing the expenditure of \$6,000 per

<sup>a</sup> Wickersham: *History of Education in Pennsylvania*, p. 155.

<sup>b</sup> Scharff and Wescott: *History of Philadelphia*, p. 1473.

<sup>c</sup> Report of the Logan Evening School.

<sup>d</sup> Report of Board of Education of Philadelphia, 1850.

<sup>e</sup> Bourne: *History of the Public School Society*, p. 614.

<sup>f</sup> *Ibid.*, p. 615.

annum for this purpose. Acting on this authority, the board opened six schools in November, 1847. These were in charge of a special committee on evening schools. They were kept open for a term of seventeen weeks and had an enrollment of 3,224. Admission was refused to hundreds. Thirty-one teachers were employed.<sup>a</sup> In 1848 the legislature authorized the opening of evening schools for women and girls and allowed an expenditure of \$15,000. This greatly increased the usefulness of the schools and their development was very rapid.<sup>b</sup> Evening schools were also authorized in Brooklyn by the law of 1850.

*Baltimore.*—In Baltimore the general process of development was much the same as that in New York. The philanthropic movement for education was very strong from the beginning of the nineteenth century, and many free day schools were established by such agencies. No positive record of free evening schools during this period has been found. However, in 1840 the board of education organized six evening schools for apprentices and other young men. These continued through 1843 and were then discontinued. The reasons given by the board were (1) want of patronage, (2) expense, (3) application of the means for education of apprentices that ought to be used for the instruction of younger pupils. In 1856 they were again resumed.<sup>c</sup>

### III. FREE PUBLIC EVENING SCHOOLS.

There were at least two other places where evening schools were established very early, namely, Louisville, Ky., and Cincinnati, Ohio. Neither of these places seems to have passed through the stage of benevolent control of evening schools, although it may have done so. Not being bound down by traditional policies in educational matters, they responded more quickly to new ideas.

*Louisville.*—Louisville is one of the numerous claimants for the "first night school taught in the United States," or, at least, the first public night school. In the case of Louisville, the claim is supported by Barnard and more recently by Dexter, who says: "What seems to have been the first evening school in the country in any way connected with public education or having any bearing upon its subsequent development was opened in Louisville, Ky."<sup>d</sup> The history of this school is given in the Report of the Louisville Board of Education for 1897, on pages 147-150. It appears that in November, 1834, following the direction of the city council, an evening

<sup>a</sup> Report of Board of Education of New York City, 1847.

<sup>b</sup> Emerson A. Palmer, *New York Public Schools*, pp. 125-130.

<sup>c</sup> Report of Board of Education, 1840, p. 325.

<sup>d</sup> Dexter: *Education in the United States*, p. 540.

school was opened. The majority of the pupils were apprentices; there were 22 enrolled. This school was continued for two years only, during 1834-35 and 1835-36. It was not reopened until 1842, when two schools were conducted for one year. The next record of a public evening school is in 1859, when two or three such schools were opened. In the fall of 1860 the board refused to reopen them and they were not reestablished until 1873. They continued from 1873 to 1876, were discontinued until 1882, and have been continuous ever since the latter date.

The claims of Louisville to the "first night school" and to the "first evening school in the country in any way connected with public education" will not stand. The school conducted in Salem, Mass., in 1774 was connected with the public school system, and certainly that conducted in New York by the Public School Society from 1833 to 1836 was not only connected with public education, but at least in part supported by public funds raised by taxation. But the importance of these early beginnings in Louisville can not be doubted.

*Cincinnati.*—The founding and development of evening schools in Cincinnati is of especial interest. Section XVI of the act passed by the State legislature of Ohio March 16, 1839, is as follows: "That in all districts composed in whole or in part of an incorporated town, city, or borough it shall be the duty of the directors to provide a suitable number of evening schools for the instruction of such male youth over 12 years of age as are prevented by their daily avocation from attending day school; which schools shall be subject to such regulations as the directors from time to time may adopt for the government thereof."<sup>a</sup> This, so far as I can determine, is the first State law in regard to evening schools. In accordance with this act there were opened in Cincinnati in November, 1840, three evening schools. As there were only three teachers, it might be better to call them classes. These schools had a fairly continuous existence, being in session all but one year up to 1861. In 1855 schools for girls were also opened.

So far as I can learn, no other city in Ohio opened evening schools in accordance with the regulations of this law. When the common schools were reorganized in 1853 it was no longer made obligatory to provide such schools, but was left to the discretion of the school boards.

Other cities opened evening schools about this time or a little later. Pittsburg had them in 1856, and how much earlier I can not determine. San Francisco established them in 1856, St. Louis in 1859, and Chicago in 1862. In 1859 New Bedford, Mass., conducted even-

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<sup>a</sup> Acts of a general nature passed by the thirty-seventh general assembly of Ohio at its first session. Columbus, 1889, Vol. XXXVII, pp. 64-65.

ing schools in which seven teachers were employed. When the city first established these I can not learn. In New Orleans there were such schools as early as 1859 or 1860, but they were discontinued soon after. Thus we see that in 1860 there were at least fifteen cities where evening schools had been conducted as a part of the public school system and probably there were more than these. In fact, nearly all the larger cities were entirely familiar with the idea of such schools and of the use of public school money for their support.

Concerning the third period of development, it is not necessary to give details. The growth has been very great not only in the enrollment, but in the number of cities conducting such schools. There are no complete records of attendance in the evening schools for the United States as a whole. The data given in the reports of the Commissioner of Education are not complete.

Thirty-two cities reported evening schools in 1881, 165 in 1900, and 180 in 1905.

The total enrollment in the schools reporting was 150,770 in 1890, 203,000 in 1901, and 292,319 in 1905.

The actual number enrolled in all evening schools is undoubtedly much in excess of this. These schools are gaining recognition more and more as essential parts of the educational system. In 1905 at least nine States recognized evening schools in their child-labor laws, making it unlawful to employ any child under 16 years old who can not read or write English unless he attends an evening school, where there is such a school, or some other school.

In 1883 Massachusetts passed a law compelling towns having 10,000 inhabitants or over to maintain elementary evening schools. Connecticut also has a similar law. Since 1886 in Massachusetts cities having 50,000 inhabitants or over have been under obligation to support an evening high school upon the petition of 50 or more residents over 14 years old who desire to attend.<sup>a</sup> In Indiana all cities of 3,000 inhabitants and over must conduct evening schools on petition of 20 or more citizens.<sup>b</sup> In New Hampshire all towns of 5,000 inhabitants or over are compelled to establish evening schools on petition of 5 per cent of the voters. In Pennsylvania cities must conduct such schools on petition of 20 or more parents of children 6 years of age and older. In Ohio, Louisiana, and Georgia permission is directly given to conduct such schools, and in several other States it is implied.

The later tendencies in the evening school movement which are especially significant are in the direction of the establishment of

<sup>a</sup> Dickinson: Mass. Public School System, p. 7.

<sup>b</sup> School Laws of Indiana, 1904, p. 135.

evening high schools and the introduction of trade or industrial work into such schools.

#### IV.—EVENING HIGH SCHOOLS.

While the first movement for evening schools was undoubtedly toward giving those who lacked the rudiments of education the opportunity to acquire them, there was very early a tendency manifested in some cities in the direction of affording means of further education to those who were studiously inclined and ambitious to improve themselves. The earliest indication of this was in the city of Cincinnati. As early as 1828 the Ohio Mechanics' Institute conducted lectures and classes in botany, chemistry, mechanics, geometry, and arithmetic. Apprentices and minors, sons of members, were entitled to attend these classes on payment of 50 cents per annum.<sup>a</sup> This was not really a high school, but a school of science, and was not entirely free, for a small fee was charged and the membership limited to certain classes of people. Nevertheless, it undoubtedly had a strong influence on the establishment of an evening high school.

In 1841, and possibly earlier, the trustees of Woodward College and High School, then a private endowed institution, conducted evening classes in the college rooms, in which were taught "mercantile arithmetic, bookkeeping, algebra, geometry, architectural drawing, plane trigonometry with its applications, surveying, mensuration of planes and solids—particularly of carpenters', painters', masons', and bricklayers' work, etc." These classes were organized for young men who were at work during the day. "Nearly 80 young men are thus accommodated, and no charge made to those who are engaged in labor or business during the day;" others paid tuition fees.<sup>b</sup> These classes were not connected with the public school system, but they exerted a wider influence than the classes of the Mechanics' Institute. The curriculum was not a copy of that of the day school, but showed a strong tendency toward science and to minister directly to the practical needs of the pupils reached. This "college" or academy was in 1851 merged into the public school system, its endowment going to support high schools and itself becoming the Woodward High School.

These two evening schools undoubtedly had a strong influence on the establishment of what is almost certainly the first free evening high school conducted and supported by public school authorities in this country. This was opened October, 1856, in Cincinnati, thus antedating the one in New York City by ten years. A preliminary examination in elementary subjects was required and a three-year

<sup>a</sup> Charles Cist: Cincinnati in 1841, pp. 128, 132.

<sup>b</sup> Ibid., pp. 258-259.

course laid out. The first year there were 108 in attendance, all in the lowest class, besides some others in a preparatory class. The studies pursued in the lowest class were algebra, geometry, book-keeping, drawing and design, and vocal music.<sup>a</sup>

In New York City, Assistant Superintendent Jones recommended in 1864 that an evening high school be established. This was done in October, 1866. This school was the first public high school of any kind in New York City, the day high schools not having been established until many years after. Candidates were required to pass a preliminary examination in elementary subjects. The curriculum included English grammar and composition, reading and declamation, penmanship, bookkeeping, arithmetic, algebra, geometry and trigonometry, natural philosophy, chemistry, astronomy, American history and political science, architectural and mechanical drawing, practical mechanics and navigation, besides French, Spanish, and German, if a sufficient number applied.<sup>b</sup> This school was successful from its opening and has had a continuous existence. In 1888 it was removed to grammar school house No. 26 on West Thirtieth street. In 1877 the number examined for admittance was about 3,500, and the number passed about 1,800. No other evening high school was opened until 1887. Since that time others have been established. In 1900-1901 there were six evening high schools in Manhattan and the Bronx and two in Brooklyn, and in 1904 there were ten in Greater New York.

An evening high school was first opened in Chicago in 1868. The same year, the O'Fallon Polytechnic Institute was established in St. Louis. This took the place of an evening high school and is at present classed as such, although it was not a duplicate of the day high school, but rather aimed at more practical training. The same may be said of the Artisans' Night School opened in Philadelphia in 1869. Its aim was "to supplement an elementary education by such higher instruction as might be of practical service to the students in their various lines of work." It included in its curriculum mechanical and engineering drawing and steam engineering, as well as geometry, physics, and chemistry. Gradually elective courses were introduced, and in 1898 its name was changed to the Evening High School.<sup>c</sup> Boston established an evening high school in 1870.

We see, then, that in 1870 there were at least five public evening high schools, or what may be called such. In 1903-4, according to the Report of the United States Commissioner of Education, there were 32 cities in which evening high schools were conducted; there were 59 schools, 426 teachers, and the total enrollment was 40,568.

<sup>a</sup> Report of the Board of Education of Cincinnati, 1854-57, pp. 11, 12.

<sup>b</sup> New York Public School Report, 1866, pp. 27-28.

<sup>c</sup> Report of the Board of Education of Philadelphia, 1904, pp. 70-73.

These high schools are not by any means of the same grade, the variation being much greater even than in the day high schools. They all very nearly agree, however, in the ages of the pupils received, the majority being of high school age—between 14 and 20. Some give very elementary work, while some few are real high schools, recognized as being on a par with the day high schools organized in courses leading to a diploma. In the majority of these schools there is a distinct tendency toward the more useful subjects, although the studies included in the curriculum of the day high schools are not neglected.

#### . V. TRADE AND TECHNICAL INSTRUCTION IN EVENING SCHOOLS.

In some ways the most significant movement in the evening school field is the effort to minister more directly to the material needs of the pupils by means of trade or technical instruction. Probably the first evening work of this kind was that in mechanical and architectural drawing given for the benefit of apprentices and others and inaugurated by the various mechanics' institutes and like organizations. Of these, Franklin Institute in Philadelphia had evening classes in 1824, Ohio Mechanics' Institute in Cincinnati in 1828, Maryland Institute for the Promotion of Mechanic Arts in Baltimore in 1847, and the Mechanics' Institute in New York City in 1859. These are a few of the more important efforts chiefly on the part of labor organizations to provide industrial or technical instruction supplemental to the shop training of apprentices.

It is not certain when work of a technical character was first introduced into the evening schools, but it is worthy of note that there was a tendency in this direction in the curricula of four of the high schools first established, namely, those in Cincinnati, New York, St. Louis, and Philadelphia. This is indicated in the names of two of them, that of St. Louis being called the O'Fallon Polytechnic Institute, and inclining toward sciences and technical work, and that in Philadelphia, the Artisans' Evening School. It is not improbable that this fact shows the influence of the industrial elements in the Lancastrian schools. Most of these first schools lost some of their technical character later, or rather the technical and industrial parts of the curriculum were overshadowed by the traditional courses later introduced. This was due in some measure to the fact that the teachers in the evening schools were, for the most part, day high school teachers, but perhaps more to the fact that the traditional high school course was considered the gateway to social standing and culture. Anything else smacked of servility, of a lower social order.

In 1870 Massachusetts passed a law compelling all towns of 10,000 inhabitants and over to give free instruction in mechanical and industrial drawing to persons over 15 years old either in day or evening

schools.<sup>a</sup> In 1872 permission was given to any city or town to establish and support industrial schools in which instruction might be given in the arts and in the various trades and occupations. Attendance upon these was not to take the place of the regular day school attendance required by law.<sup>b</sup> These two laws did much to influence the character of the instruction in evening schools in Massachusetts, but it was not until 1898 that the permission given in the law of 1872 was taken advantage of by any city. In that year was established the Springfield Evening School of Trades. "A few weeks after the organization of the Mechanic Arts High School, now known as the Technical High School, the school committee then in power, upon the recommendation of Superintendent Thomas M. Balliet, voted to organize night classes for giving instruction in certain mechanical trades for which there was a local demand, and for which the new high school could furnish the necessary equipment and teaching force with little additional expense."<sup>c</sup> The object of this school, as stated in a special report of the school committee for 1903, page 3, is "mainly to give men already employed in the trades, who know, therefore, at least a part of the trade in which they are employed, an opportunity to broaden their mechanical training and make themselves more efficient workmen. It is not the function of this school to train apprentices, as such, but to supplement the imperfect and highly specialized training of modern shops by giving machine hands, helpers, and apprentices, so far as there are any apprentices, an opportunity to gain practice in a greater variety of work than would ever be open to any one man under the modern system of machine production." "The tuition in all classes is free to all persons over 14 years of age who are residents of Springfield, but a fee of \$5 for materials and other incidental expenses is charged each member of the classes in machine-shop practice, in pattern making, in plumbing, and in the laboratory work in electricity." This also serves as a guaranty of good faith on the part of the pupils enrolled. Nonresidents are charged a tuition fee of from \$10 to \$15 per study, in addition to the incidental fee. The studies pursued include mathematics, mechanical drawing, electricity, plumbing, pattern making, machine shop practice and tool making, and woodworking and joinery.

One unusual thing about this school is that it is not called an evening high school, nor does it make any pretensions to such a character. The pupils are older than in the ordinary schools, the average

<sup>a</sup> 34th Report of Mass. Board of Education, 1870, p. 143.

<sup>b</sup> 36th Report of Mass. Board of Education, 1872, p. 181.

<sup>c</sup> Letter of Charles F. Warner in Report of Mass. Commission on Industrial and Technical Education, p. 178.

age in 1902 being 23.7 years, more than half being over 21 years old. Candidates are not excluded on account of lack of preparation in elementary subjects. So far as can be learned, this is the only school of its kind. It has not incurred the enmity of the labor unions because it admits only those actually at work, i. e., it aims to increase the efficiency of those who are at work instead of increasing the number of workers. The school seems to be increasing in popularity, and is doing splendid service.

The idea of utilizing the equipment of mechanic arts and technical high schools for evening instruction is gaining headway in our larger cities. New York City has two such evening schools, and Chicago, Boston, Philadelphia, Pittsburg, Buffalo, and Indianapolis are each conducting a school of a similar kind. These are not so distinctively trade schools as that in Springfield, but they give good courses in technical and industrial subjects. Philadelphia is about to open an evening trade school for those employed during the day. The thirteen courses already decided upon are: Printing, house and sign painting, pattern making, carpentry, electrical construction, machine drawing, architectural drawing, plumbing, plastering, brick-laying, steam fitting, sheet-metal work, and blacksmithing. Requirements for admission are to be about the same as for entrance to the high school. The two schools conducted in New York City are the Trade School in Long Island City and the Technical and Trade School in Brooklyn. Admission to these classes is restricted to those who are not in attendance at a day school and who are employed during the day in some regular occupation. Candidates are not required to be graduates of an elementary school. The sessions are from 7.30 to 9.30, four evenings a week.

The subjects taught in the Brooklyn Evening Technical and Trade School are as follows: Carpentry and joinery, cabinetmaking, pattern making, blacksmithing and tinsmithing, plumbing, machine-shop work, printing and typesetting, mechanical drawing, machine design, electrical and steam engineering, electric wiring and installation, industrial chemistry, applied physics, bookbinding, advanced dressmaking, millinery, and domestic science. The school in Long Island City does not offer so many courses, but is conducted in connection with the evening high school.

There can be no doubt of the popularity of these schools. They are filled to overflowing, and the interest manifested is very great. Here the pupil is able to obtain something tangible in the way of assistance in his particular occupation. The help received represents increase in wages and higher position. The pupil is able to secure a general knowledge of plumbing, for instance, which it is impossible for him to obtain as a plumber's helper.

These schools have not been in operation long enough to judge of their ultimate success, but they have already demonstrated the fact that not only is there great need for such schools, but that many are eager to take advantage of the opportunity thus offered. The aim of these schools is to make better workmen, and little attempt is made to secure general training. Whether the latter can be effected in connection with the special work, or whether it would be wise to attempt such a combination, can be determined only by actual experiment.

#### VI. CONDITIONS PREJUDICIAL TO THE EFFECTIVENESS OF EVENING SCHOOLS.

*Hours of instruction.*—The amount of time given to instruction in the evening schools is, of course, not comparable to that in the day schools. The usual time is 2 hours per evening for 4 evenings a week, and 20 weeks a year, making a total of 160 hours altogether. The variability is very great, however. In a few schools the evening session is only 1½ hours long. The number of evenings per week varies from 2 to 5, while the number of weeks per year varies from 10 or less to 32 or even somewhat more. So that in total available hours of work the range is from about 25 or 30 per year to 250 or 275. Compare this with the 900 to 1,200 or more hours in our day schools and the maximum amount of training received in the evening schools seems small, indeed. Add to this the fact that the pupil in the evening school has practically no time to study outside of school hours, that he comes to his work tired and often apathetic, and we begin to realize how meager are the educational opportunities for our young people who are at work.

*Attendance.*—Our evening schools have many difficulties which hinder effective work. One of the greatest of these is irregular attendance. The per cent of attendance on the total enrollment is very low, ranging from about 20 to 60 or a little over. At best, the attendance in evening schools can never be as good as that of day schools. The boy or girl at work is often too tired to attend; often, at busy seasons, they are compelled to work overtime and are thus kept away. The attraction of parties, theaters, and lectures is very often sufficient reason for nonattendance. The main business of the pupil is his occupation; the school is an extra and does not absorb his interest to as great an extent as is the case with the pupil in the day school. Various methods have been employed to counteract this irregularity. One that is often tried and has been very successful is that of charging a nominal tuition fee, \$1 or more a term. This is refunded at the end of the term in case of a certain per cent of attendance. In Wurtemberg and Saxony no trouble of this kind is experienced, for not only the enrollment, but the attendance as well, are in the hands of the police and are carefully enforced. In Eng-

land, where attendance is voluntary, the same trouble is experienced as with us. It seems that the only solution for this difficulty will be in making the evening work so practical, so vital to the interests of the pupils, that it will compel attendance. No system of compulsory attendance can possibly have as much influence as the proper adaptation of the work to the needs of the pupils.

*Teachers.*—Another difficulty is the want of proper teachers. At first it was considered that anyone could teach in the evening school. As a consequence, clerks, young lawyers, students, and others were employed. Experience has shown that evening school work requires the very best teachers. Many who are successful in day school work are totally incapable of interesting the pupils in the evening schools. The two situations are not at all the same. The majority of evening school teachers at present are teachers in the day schools, and will continue to be such for some time to come. There is, however, a growing demand for specially trained teachers for this work. Not only are the best of the day teachers demanded, but even these are not sufficient. The teacher of the coming evening school must be one who has made in his own life a practical application of what he teaches, and who can make his pupils see that application. Abstract work is giving way to concrete applications. The pupils who attend these schools have their dominant interest in concrete realities, and the teacher must be able to show the application of the abstract principle to the everyday work of the pupil.

#### VII. CLASSES OF PUPILS.

There are several more or less distinct classes of pupils in the public evening schools as at present constituted, as follows:

I. Those who are deficient in the rudiments, or who have not had an educational equivalent to that of our elementary schools. The great majority of the pupils are of this class, probably fully 85 per cent of the total number. In the philanthropic period, the evening school movement was entirely concerned with these. When we come to examine this class, however, we find it by no means homogeneous. It is composed of native Americans and of foreigners, and the needs of these are not always the same.

Among the native Americans there are (1) those who are below the average in intellectual ability, those who were dull in school, who fell behind and dropped out, and (2) those of average intelligence who were compelled on account of poverty to leave school and help in the support of the home. Among these may also be classed the "misfits," who for various reasons, on account of poor teachers or lack of sympathy, etc., left school early. The former class will not attend the evening school to any great extent except on compulsion,

the latter are more ambitious and ready to take advantage of the opportunities offered.

Among the foreigners two classes are very distinctly marked off—the illiterates, who not only do not know English, but have had practically no education at all, and those who are more or less educated. Many of the latter have received a liberal education in their own country, but on account of inability to speak and write English are at a great disadvantage. For these the evening schools are not only a means to a respectable livelihood, but, what is most important, a means to an understanding of our customs and of the duties of citizenship; in other words, a means of readjustment to new conditions. The per cent of foreigners in our evening schools varies greatly. According to the Report of the Commissioner of Education, 1904 (p. 1306), the per cent of foreign-born pupils in the evening schools of four cities is: Chicago, 61.3; New York, 30.2; Philadelphia, 28.4; Jersey City, 26.8. In addition to this, the number born here but of foreign-born parents would swell the total per cent of those who could be classed as foreigners. In Chicago the foreign-born pupils and those of foreign-born parents are about 83 per cent of the total enrollment.

II. The second main class found in our evening schools is made up of those young people who have passed through the elementary grades, and some even partly through the high school, and who wish to continue their education. The foreign element in this class is not so large. For these the evening high school was established and has proved very satisfactory. The young people in these schools are above the average in intelligence. They represent the brighter element of those who drop out of the day school; they are ambitious and eager for further work; they are future leaders and will well repay any effort to train them. Here is to be the great work of our evening schools for the future.

The needs of this class are as varied as their occupations. Some look forward to college or university work, and for such a duplication of the courses of the day high school is given. There is a larger part, however, who do not wish this, but desire to prepare themselves for higher positions, for greater efficiency in the occupations in which they are engaged. From these there has come an increasing demand for technical and trade work, and it is very largely this class which is found in our few evening trade and technical high schools.

III. There is a third class, not entirely distinct from the second, consisting of men in business who wish help along special lines. These are the men who make up a considerable part of the pupils in Young Men's Christian Association classes. As yet there are very

few in the public evening schools, except such schools as the Evening School of Trades, in Springfield, Mass.

IV. Finally, there is a general class, including many of the others mentioned, but whose need is more general. They are "clubable" men and women who lack opportunities for helpful social intercourse. For these the public lecture courses, recreation centers, etc., which are found in increasing numbers in our larger cities, are the chief means of help.

#### VIII. PROSPECTIVE DEVELOPMENT.

It is impossible to estimate properly the influence of the public evening schools, or even to predict the scope of their future usefulness. As first organized, they were attempts to give the benefits of the day schools to those unfortunates who had not been able to obtain an elementary education. They are now showing signs of better adaptation to the needs of the particular classes which they are designed to reach. The close adaptation to the needs of a locality, shown in the German Fortbildungsschulen, we are beginning to see in our own evening schools. The movement once begun is sure to spread and take firm hold of our educational system. As we have seen in a previous section of this work, their quantitative influence is still very slight. The great mass, not only of the illiterate, but also of the young working men and women who desire help in further work, is still scarcely touched. Only in a comparatively few cities are the facilities at all adequate. Could we obtain data for the United States as a whole, we would see how poor a showing we would make in this direction when compared with Germany and England.

The need for such work is just beginning to be felt, the problem has just presented itself. Our cities have grown so rapidly that it has been almost impossible to keep up with the educational needs of pupils in the day schools, and very little attention has been given in the country as a whole to other fields of effort. The educational horizon is, however, steadily enlarging, and educators as well as business men and working men are beginning to see that a system of education which provides opportunities for a limited class after the age of 14 is not only narrow and inadequate, but inimical to the ideals of democracy. People are beginning to feel that, if public high schools are supported by taxation, if opportunity for a certain kind of training is given to a small per cent of young people at public expense, equal opportunity should be given to those who are not able to take advantage of the day school, and this also at public expense. It is seen to be sheer waste to allow such expensive plants as our school buildings to remain inactive and unused a large part of the available time. They are paid for by the public funds, and the public is entitled to the maximum amount of good from them.

These considerations are gradually becoming more and more prominent, and will inevitably result in a large increase in the number and efficiency of the evening schools. Although these schools are, as yet, inadequate and ill adapted to the needs of the pupils, they are at least fully established as an integral part of our educational system. It remains to be determined what their scope shall be, and how far they can profitably be utilized in the education and training of the "out-of-school."

#### R. YOUNG MEN'S AND YOUNG WOMEN'S CHRISTIAN ASSOCIATION CLASSES.

The Young Men's Christian Association stands, according to its declared purpose, for the all-round development of the individual; the three sides of its emblem, the triangle, symbolize the physical, the mental, and the moral life which are to be developed side by side. Although beginning in this country in 1851, it is distinctly a movement of the last quarter century. At first its conception of service to young men was comparatively narrow. Its purposes were two—first, to afford an opportunity for Christian work to Christian young men, and, second, to convert men to Christianity. All its efforts, educational and other, were directed to this end. The attitude for a considerable period was, in the words of President Carroll D. Wright, "We do not really help you intellectually (and physically) because your need and our Christianity compel us to do it, but because we hope that by doing this we may make a Christian out of you." Gradually this view of Christian service has been changed, and now there is seen its true spirit, which says, "We are glad to extend this service to you, and would also like to help you spiritually if we can."<sup>a</sup>

One of the strongest features about the educational work of the Young Men's Christian Association is that it is conceived broadly. Class work, libraries and reading rooms, literary societies, and other social gatherings are conducted side by side, in addition to the gymnasiums with their expert physical directors. As now conducted, they contain the best features of young men's clubs, but are conducted on a high plane and among surroundings calculated to elevate the moral tone. From the first educational features were prominent, but there were very few evening classes. For some time Greek was the most popular subject studied, showing the character of the young men who attended. The educational features received little encouragement until the conventions of 1887 to 1891. From that time the advance has been very rapid, especially along the line of evening classes. Bound by no traditions of educational policy and actuated

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<sup>a</sup>Annual Report of Educational Department of Young Men's Christian Association, 1905, p. 41.

only by the desire to be of service, the association has responded to the needs of young men to an unusual degree. The history of this movement is given in detail in the volume entitled "Jubilee of Work for Young Men in North America, 1901."

Some idea of the growth of the number enrolled in class work may be obtained from considering that in 1891 there were in all North America between 10,000 and 12,000 students enrolled; in 1900 there were 26,906, and in 1905 there were 33,520. In addition to these there were many in attendance at various educational clubs and literary societies and many more who used the libraries and reading rooms.

The development in the kind and number of subjects taught is one of the best indications of the way in which the educational work of the association has adapted itself to meet the needs of young men. In 1860 the main subjects taught in the few classes then conducted were music and Greek. A little later arithmetic, drawing, and book-keeping were introduced. In 1905 there were 26 subjects in which regular examinations were given, and many more in which examinations were not given. In the West Side branch of the Young Men's Christian Association, of New York City, where perhaps the greatest development along this line has been attained, there were in the season of 1905-6, 63 different courses given. The general scope and variety of these can be seen from the following list, which includes 38 different subjects:

#### ART AND INDUSTRY.

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 1. Architectural drafting.          | 9. Machine design.               |
| 2. Applied electricity.             | 10. Mechanical drawing I.        |
| Interior decorating and furnishing: | 11. Mechanical drawing II.       |
| 3. I. Color and form harmony.       | 12. Plan reading and estimating. |
| 4. II. Period decoration.           | 13. Printing and publishing.     |
| 5. III. Drawing and design.         | 14. Steam engineering I.         |
| Automobile school:                  | 15. Steam engineering II.        |
| 6. I. General lectures.             | 16. Structural engineering I.    |
| 7. II. Garage laboratory work.      | 17. Structural engineering II.   |
| 8. III. Road work.                  |                                  |

#### BUSINESS, COMMERCE, AND FINANCE.

- |                                |   |
|--------------------------------|---|
| 18. Commercial arithmetic III. | Advanced business economy—continued.        |
| 19. Correspondence.            | 31. II. Modern office practice.             |
| 20. Penmanship.                | 32. III. Retail store management.           |
| 21. Spelling.                  | 33. Business law.                           |
| 22. Elementary bookkeeping I.  | Insurance:                                  |
| 23. Bookkeeping II.            | 34. I. Life.                                |
| 24. Model office boys.         | 35. II. Accident, casualty, credit.         |
| 25. Stenography I.             | 36. Investments:                            |
| 26. Stenography II.            | 37. I. Real estate problems.                |
| 27. Stenography III.           | 38. II. Real estate modern office practice. |
| 28. Typewriting I.             | 39. III. Real estate law.                   |
| 29. Typewriting II.            |   |
| Advanced business economy:     |   |
| 30. I. Executive problems.     |   |

## LANGUAGE.

- |   |   |
|---|---|
| 40. Composition.<br>41. English I.<br>42. English II.<br>43. French I.<br>44. French II.<br>45. French III, for artists, musicians,<br>etc. | 46. German I.<br>47. German II.<br>48. German III, for physicians, artists,<br>musicians, etc.<br>49. Italian for artists, musicians, etc.<br>50. Spanish I.<br>Spanish II. |
|---|---|

## MATHEMATICS.

- |  |  |
|--|--|
| 51. Arithmetic I.<br>52. Arithmetic II.<br>53. Algebra I.<br>54. Algebra II.<br>55. Analytical geometry. | 56. Calculus.<br>57. Descriptive geometry.<br>58. Geometry I.<br>59. Geometry II.<br>60. Trigonometry. |
|--|--|

## MUSIC AND MISCELLANEOUS.

- |   |             |
|---|-------------|
| 61. First aid to the injured.<br>62. Orchestra. | 63. Violin. |
|---|-------------|

From these subjects it will be seen that the educational work reaches out in many different directions where heretofore the only training one could obtain was in the office or the shop in the midst of active work.

The subjects pursued in the Young Men's Christian Association classes are grouped under six heads: (1) Commercial, including arithmetic, bookkeeping, stenography, typewriting, business law, etc.; (2) political, including civil government, social economics, history, etc.; (3) industrial, including such subjects as drawing, carpentry, etc.; (4) scientific, including algebra, geometry, physics, chemistry, etc.; (5) language and miscellaneous, including English, German, French, etc., and music, first aid to the injured, etc.; (6) special schools, such as law, art, automobile, etc. In addition to these there is the boys' department, which offers various special courses to employed boys. While many boys are in the regular classes, there is a distinct need for such work. This department is growing rapidly.<sup>a</sup>

The percentages of enrollment in the different groups of studies for the years 1900, 1903, and 1905 are here given:

	Per cent of enrollment.		
	1900.	1903.	1905.
1. Commercial subjects .....	49	46	36
2. Political subjects .....	2	2	2
3. Industrial subjects .....	16	17	16
4. Scientific subjects .....	7	10	10
5. Language subjects .....	25	21	20
6. Boys' department.....	3	4	9
7. Special—law, art, automobiling, etc. ....			7

<sup>a</sup> Annual Report of the Educational Department, 1905, pp. 52, 53.

One feature of the association work shows how readily it adapts itself to the needs of men. In several associations, systematic instruction has been organized in the daytime for men and boys who work at night, or who for any other reason can best attend day classes. These include studies in commercial, industrial, technical, language, and college preparatory subjects. The work is largely individual.<sup>a</sup>

The educational activities are in the hands of the educational director when there is a director, otherwise the general secretary has charge. The associations are more and more feeling the need of an experienced head to their educational work, and practically all who are doing much along this line have educational directors. The director is responsible either to the educational committee of the local association, or to the committee of management as a whole, of which the educational committee is a part. Each association is free to direct its own classes as it thinks best.

The most powerful factor in directing and unifying the educational activities of the various associations is the educational department of the international committee. This occupies only an advisory relation, but has proved itself of great value in strengthening the work. This educational department employs an expert as secretary, who gives his whole time to the study of the educational activities and to visiting the associations. Every year the international committee publishes a carefully prepared prospectus of all courses of study, together with suggestions as to methods of improvement. In this way the efforts are unified, growth is promoted, weak associations are encouraged, and the whole work strengthened.<sup>b</sup>

Another agency that strengthens and unifies the work is the system of international examinations. These were conducted in 1905 in 26 subjects. The questions are carefully prepared by a board of examiners composed of men eminent in their specialties, and are given to the students under very strict regulations. The international examiners also look over and pass upon all papers. There can be no question but that the students passed in these examinations are as well prepared in the particular subjects as the majority of students in universities who pursue the same subjects. This is shown in the increasing recognition of the international certificates at their face value by the different colleges and universities. In 1898, 12 colleges and universities accepted these certificates; in 1901 the number had increased to 110, including many of the strongest institutions in the country.<sup>c</sup>

In 1900 the total enrollment in all classes was 30,424, and the number of international certificates won was 1,498; in 1905 the total enroll-

<sup>a</sup> Annual Report of the Educational Department, 1905, pp. 12, 13.

<sup>b</sup> Ibid. 1901, pp. 4-17.

<sup>c</sup> Ibid., pp. 66, 67.

ment was 43,664, the number of certificates being 1,468.<sup>a</sup> The decrease in the number of certificates has resulted partly from an increase in the strictness with which the papers are marked and partly from the introduction of many subjects in which as yet no international examinations are given.

*Teachers.*—The teachers employed are usually strong. In the smaller associations very often the ability of the teaching force is not what it should be to do effective work, but in the larger cities experts are obtained as far as possible, and care is exercised to secure those men who are vitally interested in young men in order that their example may be an inspiration to the students.

*Fees.*—All students are required to join the association, and in addition pay a small fee for class work. This varies in amount according to the subject, in some subjects being as high as \$45 for a six months' course. The usual fee is from \$2 to \$4 for a three months' course.

*Ages of students.*—The ages of students range from 12 to 50 or 60. The average age is from 22 to 25 years, and the median age from 21 to 22 years. The students in these classes are somewhat older and more mature than those in the public evening schools, a large per cent of them being over 20 years old.

*Classes of men reached.*—The classes from which the men come are perhaps best shown by the occupations represented. The per cent from the different classes of occupations for the years 1900 and 1905 are here given:<sup>b</sup>

	1900.	1905.
Office men .....	20	19
Students and professional men .....	9	6
Clerks and salesmen .....	24	24
Mechanics .....	24	26
General tradesmen .....	23	25

It will be noted that in 1905 over half the men are artisans, mechanics, and general tradesmen, 43 per cent are of the office and clerical class, and only 6 per cent are students. Nearly 200 different occupations are represented. This shows how extensive is the influence of such work. Many college graduates are numbered among the students, seeking special help along lines of work in which they are engaged.

With all the many desirable features which the Young Men's Christian Association educational work has, it reaches only a small portion of the men who need such work. On page 27, where the table showing the proportion of young persons in Young Men's Christian

<sup>a</sup> Annual Reports of the Educational Department, 1901, p. 60; 1905, p. 53.

<sup>b</sup> Annual Reports of the Educational Department, 1901, p. 7; 1905, p. 29.

Association classes is given, we see what a small relative number is reached. Many of those whom it does reach receive great help, but by the very conditions under which such work is given it can not reach great numbers of men. Mr. Harrison S. Colburn, for many years the educational director of the West Side Branch of the Young Men's Christian Association of New York City, in an unpublished article on "Evening Schools," says (p. 48) :

' It must be frankly admitted that as long as the membership in the educational classes conducted by the association is limited to members of the organization, and so long as it is necessary to hold a \$5 annual ticket, besides paying for a class ticket (ranging anywhere from \$2.50 to \$5 or even \$10 extra, not counting the cost of class books, which must be purchased by the men individually), it can not be said that the educational work of this institution is seeking the masses of the poor, for they can not afford to pay so much for it. The association undoubtedly appeals to a class of more or less successful young men who wish to improve their condition by study along specific lines. So it is natural that the men who make a financial outlay at the beginning of the term are not likely to drop out when the work begins to stiffen.

In other words, it is reaching a part of the class of leaders. In doing this it is rendering valuable service, but its courses are of little aid to the very poor.

#### YOUNG WOMEN'S CHRISTIAN ASSOCIATION CLASSES.

The Young Women's Christian Association was founded on the same broad lines as the association for young men. Its object is "to promote the temporal, social, mental, moral, and religious welfare of young women, particularly of those dependent upon their own exertion for support." Since the character of the work of the associations for young men and young women is dependent upon their existing needs, it is inevitable that the activities of the two associations should not be exactly the same. The needs of young women in our cities are, in a sense, more varied than those of young men. There are the same general divisions of the work as seen in the Young Men's Association, including the libraries and reading rooms, the gymnasiums, the social clubs, the Bible classes, and the classes for instruction in various subjects. These latter are divided into three departments—the educational classes, classes in domestic science, and classes in domestic art.

The educational work of the Young Women's Association is not nearly so well organized or so unified as that of the young men, and no data for the country as a whole were obtainable; nor is it possible to do any more than describe it in a general way. The principal educational classes of the larger associations include those in typewriting and stenography, with English, commercial arithmetic, German and French, and domestic science and art. Under the latter head are included domestic service, dressmaking, millinery, sewing, cooking.

embroidery, etc. Comparatively little instruction is given in the regular high school subjects. The main effort is to help women who are self-supporting to become more efficient and to put within the reach of those who are not self-supporting the training which will enable them to become so.

As a result, many day classes are necessary. It may even be said that the principal work is done during the day. Adequate training in typewriting and stenography can hardly be obtained by a couple of hours' work a week, and evening classes in such branches are not encouraged. It was not possible to secure data for the evening classes separate from those for the day classes, but from the comparative numbers in a few of the associations it would seem that there are considerably more enrolled in the day than in the evening.

Applicants for these classes are not required to join the association. The tuition fee in the evening classes varies from as low as \$1 or \$2 per term to \$18 or \$20, depending on the character of the subject and the number of hours given.

The work done by the association at 7 East Fifteenth street and at the Harlem branch in New York City, is of an unusually high order, especially in the day classes. The Boston associations are also very strong. It seems probable that the character of the educational work of the larger associations is fully equal in quality to that of the Young Men's Christian Association. As yet, the educational department has not been developed generally, and does not reach as large a number as the Young Men's Christian Association. Organized effort is now being made, however, and with the more centralized administration made possible by the new National Board of Young Women's Christian Associations, this work will be greatly unified and strengthened.

### C. CORRESPONDENCE SCHOOLS.

Definite attempts at instruction by correspondence are of comparatively recent date. There have been and are still many doubts in regard to the wisdom and value of such work, but at present it has attained such proportions that it must be recognized as an educational factor of considerable importance. In this country the Chautauqua Assembly inaugurated the first general movement of this kind. This became very popular and was a source of inspiration and help to great numbers. As a financial venture it was not successful, and in 1900 the correspondence school was eliminated. Several colleges and universities have conducted correspondence courses, but most of them have found instruction by this method unsatisfactory and unprofitable and have discontinued it. Chicago University alone of the larger institutions still continues the system and with a large degree of success.

have arisen in his study. This recitation with the errors in it corrected and with the thought best to offer. 2. Informal - of students pursuing work of an advanced character is carefully outlined by the instructor. and answers, short papers are written by each student.

No examination is required, but the authorities reject any candidate.

Certificate is granted for each course successfully completed. A certificate is given for work done entirely "in absentia." To spend at least one year in resident study is a major of resident work. Except in case of disability, the student is required to complete all courses within one year from the end of the regular registers.

available in advance. These consist of the tuition fees of from \$8 to \$16 for each stage must be furnished by the student. The testimony of the university instructors is that the results in the corresponding courses are better than those in the resident work. This is due to the brighter and more ambitious class, and that independently, thus fostering self-reliance. The following courses given and general statistics for

*operations, courses, instructors, etc.*

	1892-93.	1895-96.	1898-99.	1901-2.	1904-5.
... .	261	522	799	1,111	
... .	481	1,016	1,485	2,005	
... .	97	180	217	260	
... .	425	845	1,219	1,741	
... .	44	73	92	115	
... .	300	282	48	585	
... .	80	201	48	174	

States Commissioner of Education, 1902, pp. 1081-1082.  
(of the correspondence study department.)

In addition to the correspondence school of the University of Chicago, which is undoubtedly the strongest in many particulars, there is the institution known as the International Correspondence Schools, at Scranton, Pa., which is the largest. Other schools are conducted by Baylor University, Waco, Tex.; State Normal Training School, Willimantic, Conn.; American School of Correspondence, Boston; American School of Textiles, New Bedford, Mass., and the Electrical Engineers' Institute, New York.

The range of subjects is limited only by the demands of the students and thus includes all branches of instruction. It appeals with particular force, however, to mechanics and apprentices who are not within the reach of an evening school offering instruction in the branches which they need. The ordinary daily labor of this class does not give them the theoretical and technical knowledge necessary for higher work, and this is offered by correspondence courses. Many men engaged in the higher branches of technical and scientific labor avail themselves of their privileges and derive much benefit therefrom. Boys on the farm desiring to prepare for college or technical institutions often enroll, and by great effort are able to pass the preliminary examinations. Many teachers are greatly aided in this way. The correspondence school offers help and stimulus to any ambitious person who can not avail himself of the opportunities for instruction in some institution.

The general methods of two of these schools, the University of Chicago and the International Correspondence Schools, will be briefly described.

#### UNIVERSITY OF CHICAGO.

When the University of Chicago was organized correspondence work was made an organic part of the instruction. At the time there was considerable opposition, but the marked success attending it has amply justified its introduction. Such instruction appeals to the best students, those who do not need the "prodding" of the instructor to make them keep to their work. About 85 per cent of the number enrolled are teachers who wish to keep in touch with the most modern methods of work and with new investigations.

*Method of instruction.*—Each correspondence course is arranged to cover the same ground as the resident course on the same subject, and consists therefore of a definite amount of work. Courses are of two kinds, formal and informal. 1. Formal courses are conducted on the basis of printed instruction sheets which furnish suggestions and assistance and assign the tasks to be performed. At regular intervals the student mails to the instructor a recitation paper on which he has written out the tasks assigned in the instruction sheet, the answers to such questions as are set therein, and any questions

or difficulties which may have arisen in his study. This recitation paper is promptly returned with the errors in it corrected and with such suggestions as it may be thought best to offer. 2. Informal courses are for a special class of students pursuing work of an advanced nature. The course is carefully outlined by the instructor. In place of the lesson sheet and answers, short papers are written by the pupil or a thesis on the whole subject.

*Admission.*—No preliminary examination is required, but the authorities reserve the right to reject any candidate.

*Recognition of work.*—A certificate is granted for each course successfully completed. Such work is accepted as qualifying in part for a degree, but no degree is given for work done entirely "in absentia." A candidate must spend at least one year in resident study and secure credit for nine majors of resident work. Except in case of sickness or other serious disability, the student is required to complete the course for which he registers within one year from the end of the quarter in which he registers.

*Expenses.*—All fees are payable in advance. These consist of the matriculation fee of \$5 and tuition fees of from \$8 to \$16 for each course. Text-books and postage must be furnished by the student.<sup>a</sup>

*Value of the work.*—The testimony of the university instructors is to the effect that the students in the corresponding courses are better prepared than those who take the resident work. This is due to the fact that they represent a brighter and more ambitious class, and that the work is done independently, thus fostering self-reliance. The following tables show the courses given and general statistics for different years:

*Summary of registrations, courses, instructors, etc.<sup>a</sup>*

	1892-93.	1895-96.	1898-99.	1901-2.	1904-5.
New registrations .....	261	522	799	1,111	
Total registrations .....	93	481	1,015	1,485	2,005
Courses actually given .....	39	97	186	217	280
Different students enrolled .....	82	425	845	1,219	1,541
Teachers .....	23	44	73	92	115
Registrations completed .....	4	106	282	438	585
Registrations dropped .....	4	89	261	338	418

<sup>a</sup> Report of the United States Commissioner of Education, 1902, pp. 1081-1083. (From "Announcements" of the correspondence study department.)

*Statistics of instructors, registration, and credit.<sup>a</sup>*

Departments.	Instructors.				Total registration.		Credit given.			
	Instructors.		Total registration.		Registration completed.		University credit given.			
	1904.	1905.	1904.	1905.	1904.	1905.	1904.	1905.		
1. Philosophy.....	8	8	122	155	41	49	11	25		
2. Political economy.....	4	5	29	31	6	7	3	3		
3. Political science.....	2	1	17	17	3	5	2	4		
4. History.....	3	8	128	172	39	63	19	31		
5. Sociology and anthropology.....	7	5	46	31	18	7	12	5		
6. Household administration.....		2		8		3		2		
7. Comparative religion.....	2	2	4	2	3	1	1			
8. Semitic languages and literature.....	2	3	43	32	13	4	1	1		
9. Biblical and Patristic Greek.....	6	5	90	70	16	11	2	4		
10. Greek language and literature.....	5	5	32	35	11	7	4	7		
11. Latin language and literature.....	3	5	174	213	70	90	27	55		
12. Romance language and literature.....	6	8	82	108	18	39	12	18		
13. Germanic language and literature.....	7	7	78	103	27	31	14	19		
14. English language, literature, and rhetoric.....	12	13	581	609	161	166	41	53		
15. General literature.....	1	1	2	2						
16. Mathematics.....	4	7	122	180	27	44	12	15		
17. Astronomy.....	2	2	7	10	2	2				
18. Physics.....	1	1	8	15	1	4				
19. Chemistry.....	1	1	3	6		3		1		
20. Geology.....	2	3	15	24	2	6	1	1		
21. Geography.....		2		11		2		1		
22. Zoology.....	4	4	13	11	2	4	1	1		
23. Anatomy.....	1	1	1	2						
24. Physiology.....	1	2	9	12	1	5		1		
25. Botany.....	4	6	66	66	19	18	6	4		
26. Pathology and bacteriology.....	1	1	5	2	2	1				
27. Old Testament literature.....	2	1	15	22	3	2	1	1		
28. New Testament literature.....	1	1	14	14	2	2				
29. Systematic theology.....	2	3	4	6	1	3				
30. Church history.....	2	2	3	5		2		1		
31. Homiletics.....	1	1	8	4	4	1				
32. Library science.....	1	1	23	22	4	3				
33. Nature study.....		1		2						
34. Drawing.....		1		3						
	103	119	1,744	2,005	490	585	170	233		

<sup>a</sup> University of Chicago, president's reports for 1904 and 1905.

The students in these courses are from all parts of the world, some registering from Australia, Turkey, and Japan, as well as from Europe and Canada.

## INTERNATIONAL CORRESPONDENCE SCHOOLS, SCRANTON, PA.

This school is the largest of the correspondence schools, and is representative of the class of schools operated as commercial ventures by stock companies. The main facts in the following brief description are taken from the address of President Thomas J. Foster, delivered at the fifteenth anniversary of the schools, October 16, 1906, and from the information given by the officials of the schools to the Commissioner of Labor.<sup>a</sup>

*Pupils.*—The classes most interested in this work are those of apprentices and mechanics, although many others take advantage of the

<sup>a</sup> Report of the United States Commissioner of Labor, 1902, pp. 225-234.

courses. The average age is about 26 years, being considerably more even than that of the Young Men's Christian Association classes. The geographical range is world-wide. Much time and money are spent in advertising the institution; representatives are in the field constantly, and no effort is spared in securing students.

*Methods of instruction.*—These are in general very much the same as those used in the "formal courses" of the correspondence department of the University of Chicago, but the supervision is not so strict nor are the requirements so rigid. No limit is placed on the time when a given course is to be finished, and it often runs on for six or eight years. The per cent of those completing courses is much less than that in the University of Chicago.

*Admission.*—The only requirement for admission is the ability to read and write English.

*Expenses.*—The expense of the courses is much higher than that in the university. Each "scholarship," which represents a given course, has a fixed price ranging from \$50 up. They are usually paid for in installments, the initial fee being \$5. Text-books are furnished by the school. The volume of the business may be seen from the receipts for 1905-6, which were \$4,200,000, and in September, 1906, the sum of \$425,000 was taken in. In the past fifteen years \$2,300,000 in dividends have been paid to the stockholders.

*Courses of instruction.*—An idea of the present scope of the instruction may be obtained from the 31 schools into which the teaching organization is divided. Each of these is in charge of a principal, who may have an assistant principal, and will have in his separate organization from one-half dozen to over 50 examiners and assistant instructors. \* \* \* The titles of the 31 schools are: Advertising, architecture, arts and crafts, chemistry, civil engineering, civil service, commerce, drawing, electrical engineering, electrotherapeutics, English branches, French, German, Spanish, law, lettering and sign painting, locomotive running, mathematics and mechanics, mechanical engineering, coal mining, metal mining, navigation, pedagogy, plumbing, heating and ventilation, sheet-metal work, shop and foundry practice, steam and marine engineering, structural engineering, telephone and telegraph engineering, textiles, window trimming and mercantile decoration.

*Text-books.*—A special feature of this work is the text-books, which are written usually by competent experts with special reference to home study. The illustrations are profuse and the language simple.

*Enrollment.*—As has been mentioned before, it is impossible to determine the number of students. Many have dropped out, many enroll only to secure the text-books, with no intention of completing courses, and many take several years to complete the course. The number given out by the officials is about 350,000. But to reduce this number to anything like the same footing as that representing the enrollment in the evening schools or those of the Young Men's Chris-

tian Association we must divide it by 6, as suggested in the Report of the Commissioner of Education for 1902 (p. 1079). This would give about 60,000 bona fide students.

*Value of the work.*—In spite of the evident commercial element there can be no doubt but that this type of school is doing a needed service in the education of the more ambitious of the working people. Considerable discouragement certainly results from overpersuasion on the part of the solicitors, exerted upon those who have not the ability or the energy for such work. Many enroll with visions of a short cut to knowledge, of a “get-education-quick” scheme, and are in the end soured and discouraged. But the very energy of the solicitors brings the opportunity to many a man and woman who otherwise would not think that such a thing was possible for them.

Instruction by correspondence can never take the place of class instruction. It lacks the inspiration of personal contact, but as a means of help to ambitious people along special lines it has been and is of very great value.

#### D. SPECIAL SCHOOLS.

There are various educational institutions, philanthropic and semiphilanthropic in their character, which reach the working classes to a greater or less extent. These are very diverse, both in regard to the instruction offered and the general nature of the help given. Some of them, such as the Franklin Institute in Philadelphia, the People's Institute in Boston, and Cooper Union and the Mechanics' Institute in New York City, have been established expressly for the training and instruction of young men and women who are at work. Others, like the Lewis Institute in Chicago, the Drexel Institute in Philadelphia, and the Pratt Institute in Brooklyn, are more distinctly scientific or technical schools of high grade, and aim to give thorough courses leading to a degree or certificate. Nearly all the institutions of this kind also have evening classes for the benefit of those who are at work.

It is not possible to group these together in any satisfactory manner for description, for each has its own problem and its peculiar purpose and methods. Since very little help is derived from a mere summation of the courses given and since a description of all of these schools would occupy too much space, it has been thought best to describe only three of them, namely, Cooper Union, Pratt Institute, and the Mechanics' Institute in New York City, all of which have been investigated personally.

Among the institutions of this kind which are offering help to working people are the following:

**Boston :**

**Wells Memorial Institute.**

**Massachusetts Charitable Mechanics' Association Trade School.**

**People's Institute.**

**Chicago :**

**Armour Institute of Technology.**

**Lewis Institute.**

**Philadelphia :**

**Franklin Institute.**

**Drexel Institute.**

**Spring Garden Institute.**

**Hebrew Trade School.**

**Philadelphia Textile School and School of Industrial Art.**

**New York City :**

**Baron de Hirsch Trade School.**

**Cooper Union.**

**Mechanics' Institute.**

**New York Trade School.**

**Pratt Institute.**

**St. George's Evening Trade School.**

**I. COOPER UNION.**

Cooper Union for the Advancement of Science and Art is one of the best examples of a continuation school found in this country. Its establishment was the result of years of careful and patient labor. Peter Cooper realized through his own hard experience the need of help for young men and women who were at work; he had the clear judgment and vision to see what would be the best means to accomplish this result; and, finally, accumulated the means to make this vision a reality. Cooper Union was founded in 1854, and the charter in its present form was adopted in 1859.

*Purpose.*—By the terms of Mr. Cooper's trust deed the following objects were specified to be effected in the order of enumeration:

First, to provide courses of instruction at night free to all who shall attend the same, in such branches of knowledge as in the opinion of the board of trustees will tend to improve and elevate the working classes of the city of New York. This provision has been carried into effect by the night classes for workingmen and women.

Second, to [provide for] the support and maintenance of the free reading room, galleries of art and scientific collections, designed to improve and instruct those whose occupations are, in the opinion of the board of trustees, such as to deprive them of proper recreation and instruction. Under this provision the free reading room and library has been established and maintained, and more recently the museum for the arts of decoration has also been open to the public, and is now in practical use by many artisans and others who are employed in artistic occupations.

Third, to provide and maintain a school for the instruction of women in the arts of design. Under this provision the woman's art school has been established, and affords instruction to young women, as a preparation for employment and in work requiring a knowledge of drawing and colors. A school in telegraphy and in stenography and typewriting for women is also maintained.

The fourth provision looks to the establishment and maintenance of a polytechnic school by day, so that the space used at night might also be employed in the daytime for the purpose of technological education. It was distinctly provided that this portion of the work shall not be undertaken until the income of the institution will warrant the expense, without curtailing the operation of the departments heretofore enumerated.<sup>a</sup>

This last provision has now been realized, and Cooper Union stands complete. This has been made possible only through the confidence inspired in public-spirited men by the work actually accomplished in the institution. They have felt that here was a cause worthy of their support and have contributed generously.

The design of the founder was not to teach trades, but "to give instruction to those already engaged at trades in such departments of knowledge as might fit them to become foremen, employers, and good citizens." It is in no sense a part of the work to make up deficiencies in elementary education. It is for the purpose of giving capable, ambitious young people who are compelled to support themselves the opportunity of supplementing and enlarging their training in specific lines, or of giving them a thorough course in science equal to that in our best colleges. These young people are the successful men of the future, the leaders in art and industry.

*Departments.*—The departments of Cooper Union at present are: (1) A free day school of technical science for men and women, leading to the practice and profession of engineering, (2) a free night school of science for men and women, (3) a free night school of art for men, (4) a free day school of art for women, (5) a free day class in stenography and typewriting for women, (6) a free day school in telegraphy for women, (7) free classes in elocution, oratory, and debate, (8) free library and reading room, (9) a museum for the arts of decoration, (10) free lecture courses. The day courses are for those who can devote practically their whole time to study, and hence do not come directly within the scope of this paper. It must be remembered, nevertheless, that all these departments, by the character of the instruction offered and by the free tuition, are of direct help to working people who would not otherwise be able to receive such training. The departments considered are the free night schools of art and science.

*Entrance requirements.*—No student is admitted to any department of Cooper Union under 15 years of age. For the art classes no other requirement is made. In the science classes the applicant

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<sup>a</sup> Cooper Union: 54th Report, 1903, p. 48.

must pass an entrance examination, the scope of which varies with the course taken. No other requirement of any kind is made. There is absolutely no distinction made in regard to race, nationality, or religion.

*Courses of study.*—In the art department the courses offered are free-hand drawing, decorative designing, modeling in clay, architectural drawing, and mechanical drawing. Each of these is pursued four hours per week.

In the science department four courses are given, as follows:

1. A five-years course in general science. The applicant must pass a preliminary examination in algebra through simultaneous equations of the first degree and in the first three books of geometry. No certificates of any kind are accepted in lieu of examination. The following shows the course by years and the number of hours per week in each subject.

Class E, first year: Algebra—3; geometry—3; elementary chemistry—2; civics—2.

Class D, second year: Algebra—3; geometry and trigonometry—3; elementary physics—2; civics—2.

Class C, third year: Descriptive geometry—2; analytical geometry—2; mechanics—2; theory of electrical measurements—2; civics—2.

Class B, fourth year: Analytical geometry—2; differential calculus—2; mechanical drafting—2; advanced chemistry—2; civics—2.

Class A, fifth year: Applied mechanics—2; higher physics—2; work in physical laboratories—2; work in chemical laboratories—2; machine designing—2.

2. A five-years course in chemistry. For admission to this students are required to pass an examination in algebra through quadratics and in plane geometry. The course is not so broad as that in general science.

First year: Elementary chemistry—1 hour lecture, 4 hours laboratory, 1 hour recitation; elementary physics—1 hour lecture, 2 hours laboratory, 1 hour recitation.

Second year: Quantitative chemical analysis—about 1 hour lecture, 1 hour recitation, 8 hours laboratory.

Third year: Advanced work in quantitative analysis—nearly the same hours as the preceding.

Fourth year: Advanced work in quantitative analysis.

Fifth year: One of these two subjects must be taken: (a) Electro-chemistry, metallurgy, and elementary mineralogy, or (b) synthetic and analytic organic chemistry.

3. A three-years course in electricity. Entrance requirements are the same as for the course in chemistry.

First year: Algebra and geometry—2; elementary physics—recitation 1, laboratory 2; electrical measurements—lecture 1, laboratory 4.

Second year: Trigonometry and analytic geometry—2; electro-magnetism and dynamo machinery—recitation 2, laboratory 6.

Third year: Calculus—2; theory of alternating currents—recitation 2, laboratory 4.

**4. Special course in physics.** A limited number of students are admitted to the physical laboratory for practical instruction in the various branches of mechanics and physics. The instruction consists of two sessions a week. Students are also admitted to the physical laboratory to pursue any course of experimental study or investigation suited to their individual needs. The course pursued and the time for study are determined by special arrangement.

*Object of the laboratory courses.*—It is the purpose: First, to develop and fix the student's knowledge of the scientific principles that underlie the developments in the arts. Second, to teach the scientific methods of experimental investigation. Third, to show how these methods apply to the study of problems met with in the applications of science to the arts. Fourth, to give the student practice in writing reports of his observations and conclusions.<sup>a</sup>

*Examinations.*—“ Examinations of the classes are held during the last week in April and first week in May. No student is exempt from examination. The student's final standing will be determined by combining the result of the examination with that of the term's work, having regard to regularity of attendance.” Students who fail to pass these examinations “ must take the subject over in the class, and the same rules regarding attendance and recitation marks apply to such student as well as to those taking the subject for the first time. A student who fails to pass in a subject after having been a member of the class for two full terms, shall not be eligible to a third term.”

*Degrees and diplomas.*—Students who complete the five-year course in general science receive the Cooper medal and diploma and the degree of bachelor of science. \* \* \* Students who complete the course in chemistry are awarded the diploma of graduate in chemistry. Students who, the year following their graduation, satisfactorily complete a year's post-graduate work (as described in the special circular of the chemical department) will receive the degree of bachelor of chemistry. \* \* \* Students who complete the three-year course in electricity will receive a diploma certifying to that effect. No student will be entitled to this diploma who has not pursued all the subjects of the last two years in the Cooper Union and passed the examination of the same.<sup>a</sup>

*Length of term.*—“ The term for the scientific department begins the first Monday after the 15th of September, and ends about the 15th of May,” making a term of about thirty-four weeks. “ The term for the art department begins the second Monday after the 15th of September and ends about the 15th of May. The hours of study for both departments are from 7.30 p. m. to 9.30 p. m.” Each session is usually divided into two periods in the science department, while in the art department the entire time is devoted to the single study.

*Expenses.*—Tuition is absolutely free to all. Text-books and supplies are furnished by the students. These may be purchased in the school at prices considerably lower than retail.

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<sup>a</sup> Cooper Union, Circular of Information, Science and Art Department, 1906-7.

*Teachers.*—A great part of the success which has attended this work is due to the high class of instruction furnished. It would be difficult to find in any technical school or university a group of men better qualified by training and practical experience for the work of instruction.

*Attendance.*—Practically ever since its establishment the capacities of Cooper Union have been stretched to their limits. At first a considerable part of the building was rented for stores and offices, but of late years the whole building is in use and larger quarters are urgently needed. For the past three years the number of pupils at one time has been not far from 2,400, while the waiting list—those who have applied and are qualified to attend—has been about 2,500. The total number of applications from June 1 to December 31, 1905, was 6,537. The total number of pupils enrolled for a shorter or longer period during the year 1905-6 in all departments was 3,240. There seems to be no lack of interest on the part of the young people for work that really appeals to them. Another very gratifying thing is the regularity of the attendance. In the science department, Mr. Plympton says, the per cent of attendance on total enrollment is about 90. In the art department, where there are only two sessions a week in each subject, the per cent of attendance is much less. The enrollment in the different night courses of the science department is here given for the year 1905-6:

Class.	General science.	Chemistry.	Physics.	Electricity.
A.....	81	18	.....	.....
B.....	115	20	.....	.....
C.....	133	16	.....	.....
D.....	191	35	.....	.....
E.....	186	31	.....	.....
Total.....	706	120	93	88

The total number in the night science department was therefore 1,007, while that in the art department was 1,400. In the day departments there were altogether 480 students.

*Occupations of students.*—There are no definite data on this point, but the result of a recent investigation by Mr. Plympton seems to indicate that the occupation most largely represented is that of clerks of various kinds, many of these seeking a change of employment. Next to these come machinists who wish to gain technical training. This closely corresponds to the occupations of the students in Young Men's Christian Association classes (p. 105).

It seems almost useless to attempt to measure the value of the work of Cooper Union. Everyone knows both what it stands for and what it has accomplished. Its reputation is world wide. It may be worth while, however, to consider briefly a few points.

It appeals to two classes of young people, namely, those who wish to obtain training in drawing and design and those who desire to pursue courses in science. It makes no attempt to prepare for college and will not accept students who wish such work. Its instruction in science compares favorably in many ways with that given in our colleges, but is not so broad, being confined almost entirely to the scientific subjects themselves. The single exception is in the study of civics, pursued for four years in the general science course. This is in accordance with the wish expressed by Mr. Cooper to fit the students for citizenship.

In the science courses the student is required to take all subjects, no special students being allowed. This gives a broad scientific foundation, lacking only the subjects described as "cultural." It is manifestly impossible in an evening course of five years to cover all the ground that is studied in a college course of four years. The attempt is made to pick out those things which are most necessary and vital to the student. The instruction is practical and bears directly upon actual working conditions, and aims to fit the student for a definite occupation. To the ordinary student who is ambitious enough to use his evenings for study there is a decided advantage in this over the ordinary college course. That something is lost, that he does not secure all that might be secured in a course at college, seems to be without question. The broad outlook upon life, the general training obtained in our best colleges, is largely lacking in such courses as those offered at Cooper Union.

There seems to be a growing feeling that the different subjects in these courses may themselves be treated in such a way as to bring out more of this general culture or training, while still retaining their practical character. This attempt is more apparent in the work at Cooper Union than in many other schools established for this class of young people.

## II. MECHANICS INSTITUTE, OF NEW YORK CITY.

The General Society of Mechanics and Tradesmen of the City of New York was organized in 1785. "Its primary object was mutual aid, assistance in case of sickness or distress, and care for the widows and orphans of those who should die without property." It was successful from the first and was incorporated in 1792.

While still keeping to its original purpose, the scope of its work has broadened as its increasing income has permitted. In 1820 it founded the Mechanics School, for the gratuitous instruction of the children of poor or deceased members. This school became so popular that other children were admitted upon payment of a tuition

fee. The school was continued until 1858, when "the increasing merits of the public free school rendered it no longer necessary." In January, 1859, the present evening school was established.

The aim of this school is "to offer opportunity to young mechanics employed during the day to study those subjects which have a direct bearing upon their daily work, with the ultimate purpose of making them more intelligent and proficient workmen." Tuition is free to any young man, 16 years of age and over, who is of good moral character. There are many more applicants each year than can possibly be accommodated, and the waiting list is very large. This makes possible a better selection of young men and enables those in charge to insist on regular attendance. If a student is absent from class for two successive sessions and fails to notify his instructor of the reason for his absence, he is dropped from the roll and his place given to another. Under such circumstances it is not surprising that the average attendance is high, being nearly 90 per cent.

The school opens the last week in September and closes the second week in April. Sessions are held four evenings a week. The hours of instruction are from 7.30 to 9.30. This time is not usually divided, as in the public evening school, but the entire session of two hours is given to the consideration of one subject. As a rule, there are two recitation periods a week in each subject. In addition to the regular class work, technical lectures are given on the subjects pursued in the class room.

This school is under the direct control of the "school committee" of the general society. A director is in immediate charge and under him are trained assistants. In 1906 there were 19 of these instructors, 10 of whom were graduates of colleges and professional schools. The instruction given is of a high order and the requirements are very strict. The diploma of the society is awarded upon the successful completion of any of the three years courses. The awarding of this diploma is dependent upon the passing of an examination held the latter part of March.

Thirty-one separate courses are offered. Some of these are limited to one class, others have from two to seven classes in each subject. The subjects taught are architectural, mechanical, and free-hand drawing, clay modeling, elementary physics, arithmetic, practical mathematics, elementary algebra, geometry, and trigonometry, and applied mechanics. The instruction in all these subjects is made as practical as possible. The society also maintains about 20 free scholarships in the New York Trade School.

In 1906 there were nearly 1,200 young men in attendance. Mr. Rouillion, the director, estimates that the majority are under 20 years of age, very few being over 25 years old. The following comparative

table shows the attendance in the different subjects for the two years 1900 and 1903:

	1900.	1903.
Elementary architectural drawing .....	70	114
Advanced architectural drawing .....	32	70
Elementary mechanical drawing .....	77	110
Advanced mechanical drawing .....	20	68
Elementary free-hand drawing .....	66	78
Advanced free-hand drawing .....	26	29
Clay modeling .....	34	65
Mathematics .....	70	77
Physics .....	63	82
Total .....	458	683

There can be no doubt of the great value of this work. The boys are very industrious and impress one with the feeling that every minute is precious to them. Their earnestness and interest are in striking contrast with the listlessness so often seen in many of our evening schools. This is partly due to the fact that the pupils in this school are a picked lot, decidedly above the average in intelligence and general ability. The instruction bears directly upon their work and they can see its practical nature. The results of such training show in the increased wages and the higher positions which the graduates attain.

It must be said that this instruction is somewhat narrowly practical, however, its aim being limited to the making of efficient workmen. There is no question that in this very fact much of its strength lies. But strong as the work is and necessary as it is, it does not contain all the essential elements of a continuation school whose aim is to make efficient citizens.

### III. PRATT INSTITUTE.

Pratt Institute is another notable example of the effort of a farsighted man to minister to a definite public need. It represents a somewhat different type of institution from that of Cooper Union. Being founded considerably later, in 1887, when the need of the people for industrial training was becoming more apparent, this side receives more emphasis, especially in the evening classes. The purpose in the mind of the founder, Mr. Charles Pratt, was, however, by no means confined to the industrial side. "Its object is to promote manual and industrial education, as well as cultivation in literature, science, and art, to inculcate habits of industry and thrift, to foster all that makes for right living and good citizenship, and to aid those who are willing to aid themselves." It thus provides means by which, at small expense, "those who wish to enter mechanical, scientific, artistic, educational, and domestic occupations may lay the foundation of a thorough knowledge, theoretical and practical, in the work

they wish to do, or may perfect themselves in that in which they are engaged." It does not, like Cooper Union, offer free tuition to its students, but the charge for the courses is merely nominal.

While the principal work of the Institute is in the day classes, it has always recognized the importance of giving to those who are obliged to work during the day the opportunity for evening study. It is the wish of the directors that the equipment shall be used as much as possible, and thus give the maximum benefits.

*Organization.*—Evening work is given in the following departments: Fine and applied arts, domestic arts, domestic science, and science and technology.

*Entrance requirements.*—The only entrance examinations required are for the course in applied electricity and for the one in steam and the steam engine and the strength of materials. For the former an examination in arithmetic and algebra through simple equations is required, and for the latter an examination in arithmetic. The applicant must give evidence of ability to do the work of the course selected. In most cases the number of applicants is so large that all can not be accommodated and a selection is made, not necessarily in the order of application, but rather in accordance with the ability of the applicant. Thus a better type of student is obtained. In age the students range from 16 to 40 or more, but the great majority are under 24 years of age.

*Subjects of study.*—In the department of fine arts there are evening classes in freehand drawing, life and portrait painting, architectural drawing, decorative and applied design, clay and wax modeling, metal chasing, and wood carving. The tuition fee is \$10 for the term of six months, except for the course in metal chasing, for which it is \$15. All classes meet Monday, Wednesday, and Friday evenings from 7.30 to 9.30.

*Department of domestic arts.*—Evening courses are given in sewing, dressmaking, millinery, and costume design. These are for dressmakers, milliners, and others who can not attend the day classes. The tuition fee is from \$2 to \$5 per term of three months. Instruction is given on Monday, Wednesday, and Friday evenings from 7.30 to 9.30.

*Department of domestic science.*—Evening classes in cookery, serving, and laundry work are offered. The aim is to train women to be efficient, practical workers in the home. Each course requires three months for its completion. Cooking classes meet Mondays and Fridays, classes for waitresses on Mondays, and those for laundresses on Fridays. The tuition fee is \$2 per term.

*Department of science and technology.*—The evening courses in this department are divided into technical courses and trade courses. The technical course includes elementary electricity, practical mathematics, physics, technical chemistry, applied electricity, mechanical

drawing, machine design, mechanism, steam and the steam engine, and strength of materials. The evening trade courses include carpentry, pattern making, plumbing, sign painting, fresco painting, machine work, and tool making. All classes meet Monday, Wednesday, and Friday evenings from 7.30 to 9.30. Tuition fees are from \$10 to \$15 per term of six months. Applicants for the evening trade courses must be between the ages of 16 and 24 years.

*Enrollment.*—The enrollment in 1905–6 in the different departments of the evening work was as follows:

Fine arts -----	335
Domestic arts-----	182
Domestic science -----	108
Science and technology-----	756
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	1,381

In these courses, as far as the time permits, is given theoretical and practical instruction in each of the various branches. Each is intended to supplement the practical experience of the student, and enable him to advance to positions of larger responsibility.

*Certificates.*—Certificates are awarded in architectural and mechanical drawing, chemistry, machine design, plumbing, carpentry and pattern making, machine work, fresco painting, and sign painting.

*Practical talks.*—One of the most important features of the work is the course of lectures or practical talks given by each teacher. These cover a variety of subjects including not only shop methods, labor-saving devices, and other kindred subjects, but the relations of employees and employer, of the individual laborer to his family, to the community, and the state. Here a definite attempt is made to teach the dignity of labor and the proper function of the laborer in the life of the community. These are not merely perfunctory talks, but strike at the vital principles of real service. Here is certainly to be found one of the methods for counteracting the narrowing influence of mere acquisition of mechanical skill or industrial efficiency. In these talks the true teacher finds the means for enlarging the view and elevating the mind of the individual worker, so that he can no longer be simply the wage-earner, but becomes an efficient productive citizen.

*Teachers.*—The spirit of the founder of the institute is reflected in the teachers. Some of them seem to have "caught the spirit" in a remarkable degree. It is only necessary to talk with them for a short time to understand the power which these men exert over their pupils. In at least three of those with whom I talked the enthusiasm, not for the technical work alone, but for the boys themselves, was clearly evident. The instruction is only the means by which the teacher comes into close vital relations to the pupils. It is of an exception-

ally high order, but it does not stop with that. As expressed by one teacher, the attempt is "to give the technical skill and the essential facts of the trade in the proper atmosphere." These attempts are already bearing fruit in the lives of the young men who go out from Pratt to positions of large responsibility. Many of the teachers in the evening classes are practical men who are at work during the day. They do not need the salary, but teach because of their great interest in the boys. The teaching given in Pratt Institute is very effective in all departments, the standard set is high; but no more vital work is done there than this attempt to inspire the young laborer with lofty ideals of public service.

#### E. SCHOOLS FOR APPRENTICES AND EMPLOYEES.

The efforts of the welfare department of the National Civic Federation have resulted in an increased interest in all that concerns the welfare of the laborer, whether in factory, shop, or mercantile establishment. While many firms have long given especial attention to such work, organized efforts in this direction are of very recent origin. The welfare department has sought to call attention to the needs of laborers, to investigate the methods used by different establishments, and to make a careful study of the problems involved.

The general lines along which welfare work is conducted include the physical health and comfort of the employee, opportunities for recreation, educational advantages, and provisions for securing suitable sanitary homes. The character of the measures taken varies greatly, each establishment furnishing a separate problem. Considerable difficulty is encountered in the practical management of this welfare work, especially in securing a perfect understanding and co-operation between employer and employee. It has usually been found most satisfactory to allow the method to develop gradually, depending upon the initiative of the employee.

The educational features include clubs, reading rooms, and lecture courses, as well as classes in the common branches, freedland and mechanical drawing, cooking, sewing, etc., and in other subjects bearing more directly upon their work. Usually these classes, especially for the younger employees, have two distinct aims: First, to offer opportunity for intellectual training and improvement, as well as instruction in the fundamental principles underlying their work; second, to enable the employers to select the brightest and most capable young people for positions of larger responsibility. While the instruction given varies with the particular aims and needs of each establishment, two fairly distinct types may be distinguished: First, that in factories, mills, etc., which often is directly connected with the training of apprentices, and, second, that in mercantile establishments for clerks and other employees.

*Schools for apprentices conducted by educational authorities.*—Several definite attempts have been made to provide schools where apprentices could obtain that wider general and technical training which is no longer possible under the present apprenticeship system. Some of these have been mentioned in the section on evening schools. Two examples of this type, which are being successfully conducted at present, are here described: The School for Apprentices in Chicago and the Co-operative Engineering Courses of the University of Cincinnati.

#### I. CHICAGO SCHOOL OF APPRENTICES.

One of the most interesting experiments in the direction of supplementary training for apprentices is the School for Apprentices conducted in Chicago. This is unique in many particulars, and its future development will be carefully watched by all interested in the continuation school movement. The following general description is taken from the Report of the Board of Education of Chicago for 1904, and from the account in *World's Work*, vol. 5, p. 3366.

In January, 1901, in response to a request from Mr. Joseph Downey, the Board of Education began to make provision for the education of apprentices of the masons' and bricklayers' associations. Six or seven apprentices attended the English High and Manual Training School for three months during the slack season. They studied arithmetic, English, architecture, drawing, and woodwork.

In 1902 the Bricklayers' Union and the Masons' and Bricklayers' Association united in a request to the Board of Education to establish a school on the same general lines as the instruction given the first year. This was accordingly done and there were 60 pupils enrolled. In education these ranged from those who had attended a high school for two or three years to those who could read English with difficulty. A proper organization was accordingly very hard to secure.

In 1903 five teachers were employed, and the average attendance was 100. In 1904 the average attendance was 106. In the morning the pupils studied the ordinary English branches; in the afternoon they received instruction in architecture, building, and superintendence. In addition to this, lectures were given on anatomy, physiology, first aid to the injured, and on architecture, masonry, building and superintendence, fireproofing and fireproof construction, terra cotta, and the manufacture and use of steel. These subjects bear directly upon the work of the apprentice, and aim to give him a general knowledge of the trade, which would be impossible for him to obtain in actual employment. Besides this, the instruction in the common branches tends to broaden the training still further and make the apprentice more efficient. Nine months of the year are spent in the regular occupation.

The general management of the school, aside from the supervision and general control exercised by the board of education, is left to the joint arbitration committee of the union and the association. All fines assessed by the committee for the breaking of joint rules go to the purchase of text-books for the pupils. For each day's work at school each pupil is paid the regular wage of the bricklayers' union to which he belongs. If a student is absent the principal reports the fact to the arbitration committee, and the time lost is added to the time he must serve as an apprentice to his trade.

By an act of the legislature, approved May 15, 1903, it is provided that, when indentures are drawn, "in all municipalities where a manual training school is maintained for the technical instruction of apprentices, such indentures shall further provide that it shall be the duty of the master to cause the apprentice to attend such school for at least three consecutive months in each year without expense to the apprentice."<sup>a</sup> In its general provisions this law is very much like the *Gewerbeordnung* of Germany. Whether this will have any immediate result or not, it has furnished a valuable precedent in the way of placing the responsibility for the more complete training of apprentices upon the masters.

The school thus established in Chicago promises well, and if it proves successful the plan may well be adopted in many places where conditions are favorable. It has the great advantage of uniting the board of education, the labor unions, and the employers' associations in one common purpose. The Chicago carpenters' union has petitioned the board of education for a similar school during the slack months. So far no school for apprentices of this trade has been established. In all trades where there are such slack periods the plan might easily be tried and much good result.

## II. COOPERATIVE ENGINEERING COURSES OF THE UNIVERSITY OF CINCINNATI.

A notable example of the effort to provide a more complete training for apprentices is seen in the system of cooperative education in the University of Cincinnati, devised by Professor Schneider. The data for the following account are found in the University Weekly News, May 2, 1906, and the University of Cincinnati Record, November, 1906:

About thirty-five of the largest mechanical and electrical manufacturing companies in Cincinnati and vicinity have agreed to send apprentices (varying in number from 2 to 12) to the University to take a special course in mechanical or electrical engineering. These courses are six years in length and lead to the regular degrees. Ap-

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<sup>a</sup> Illinois School Laws, 1903, p. 180.

apprentices from each plant work in pairs, each one alternating with his fellow apprentice at the factory and at the university, the same work being given on alternate weeks. One student apprentice works at the shop one week while the other pursues his engineering studies; then they exchange places and so continue for the eight and one-half months the university is in session. By this plan no machine at the plant is idle and no loss is suffered by the employer. The cooperating employers pay the student apprentices only for the actual time they are at work, i. e., for the weeks they are at the shop; the wages begin at \$4.40 per week and increase at a regular rate. The employer also offers a bonus of \$100 to every boy who completes his period of apprenticeship. In this way the apprentice can earn in the six years enough to pay all his college dues, and \$1,230 besides, to help pay his living expenses.

*Admission.*—A high school education or its equivalent is usually demanded for admission, although students well versed in mathematics may be admitted conditionally. A period of two or three months of work in the shop always precedes the entrance to this school. This is for the purpose of proving the mental and mechanical ability of the apprentice.

The details of this plan were only completed in June, 1906, but before the opening of the session in September more than 30 young men had enrolled. Both manufacturers and instructors are well pleased with the results so far achieved. Some of the more obvious advantages of the plan are as follows: (1) The student supports himself largely; (2) his theoretical and practical training go on together, each simplifying and shortening the other; (3) his practical work is supervised by practical men, who are constantly on the lookout for the best men to fill positions of responsibility. Thus the apprentice is sure of a good position on the completion of his term of apprenticeship. It will be remembered that an arrangement somewhat similar was mentioned as being tried at the University of Manchester, England. It hardly seems possible that any reasonable objection can be raised to such a plan as this. It seems likely to result in great good to the university, to the employer, and to the apprentice.

*Educational training for apprentices in factories.*—For many years considerable attention has been given by various manufacturing firms to the education of their apprentices. The methods employed are various and the results obtained not uniformly successful. Some kinds of factories lend themselves more easily to such efforts than do others.

Among the establishments conducting successful schools for apprentices may be mentioned the Baldwin Locomotive Works, Philadelphia; the National Cash Register Company, Dayton, Ohio; Yale and Towne Manufacturing Company, Stamford, Conn.; the Ply-

mouth Cordage Company, North Plymouth, Mass.; Brown & Sharp Manufacturing Company, Providence, R. I.; the General Electric Company, Lynn, Mass.; and R. Hoe & Co., New York City.

In order to show the character of the work done, the last two of these will be described in detail.

### III. SCHOOL FOR APPRENTICES CONDUCTED BY THE GENERAL ELECTRIC COMPANY OF LYNN, MASS.

The system of training apprentices employed by the General Electric Company at Lynn, Mass., is in many ways very complete and effective. The following facts are taken largely from a paper read before the American Society of Mechanical Engineers by Mr. Magnus W. Alexander. Extracts from this paper are found in the Engineering Magazine for January 1907, pages 625-628.

Candidates for apprenticeship must be at least 16 years old and have a grammar school education. They are placed on trial for a month or two, and at the end of that time those who seem capable are allowed to sign a regular apprenticeship agreement. This provides for a service of four years at stipulated wages on a progressive scale from \$4.50 a week during the trial period to \$9.25 during the last year. A cash bonus of \$100 is paid at the termination of the course, and a "certificate of apprenticeship" is given at that time.

It is the aim of the General Electric Company to train skilled artisans in the various trades of machinist and tool maker, carpenter and pattern maker, iron, steel, and brass molder, instrument maker, and electrical worker, in such a thorough manner that the leading positions in the factory, such as assistant foremen, foremen, master mechanics, and superintendents may be filled from the ranks of graduated apprentices.

It is clearly seen that such leaders should possess some information besides a practical knowledge of their trade; they must see beyond the present task and understand it in its relation to the whole process, and have the ability to so grasp the situation that the best results may be obtained. In order to do this, the General Electric Company has provided for theoretical training of a very practical character, which is designed to enable the boy "to apply in the workshop the knowledge he gains in the schoolroom." For ten months each year the apprentices receive instruction by turns in the class room for six hours a week during the day. The schoolrooms are close to the workshop and the time so arranged that about one-fifth of the apprentices are at school at one time. The same wages are paid the boys for this time as for the time when they are at work.

"The teachers in the schoolroom are men selected from the staff of engineers, draftsmen, and foremen, who are assigned for six hours per week to the work of teaching." The subjects taught are mathematics, physics, technology, and mechanical drawing. Examinations

are given frequently during the year, and the final examination determines largely the standing of the apprentice and the wages he will receive. There is a special shop under control of a man in charge of apprentices. This man has had years of experience as a mechanician and has unusual ability in handling boys. He has only two assistants, the older apprentices themselves being utilized as instructors for the beginners. After learning one process, the apprentice is usually required to teach it to a younger apprentice before he begins to learn another. The apprentices spend from one and a half to two and a half years in this training room, according to their ability, and are then transferred to the factory departments and placed under the charge of the foremen. On the completion of the course the best men are encouraged to remain with the company.

By this means the company not only selects the most capable young men, but also gives them the training which will enable them to perform the most successful service as foremen, expert machinists, etc. The apprentices thus obtain a general knowledge which it would be impossible for them to get by work in the shops. This training is eminently practical and very effective, but it must be conceded that it is somewhat narrow. The purpose in view is that of selecting and training foremen for a particular branch of work. There is no attempt to minister to the larger needs of the individual. Such schools are doing good service, but they can not be regarded as furnishing the kind of education most demanded by the great body of our young people who are not in school.

#### IV. SCHOOL FOR APPRENTICES OF R. HOE & CO.

One of the first establishments that attempted to provide general training for its apprentices was that of Hoe & Co., of New York City. From 200 to 300 apprentices are here given systematic instruction in subjects calculated to increase their efficiency as intelligent workmen. The principal facts in this description were given by Mr. Henry Watterson, the present director.

*Admission.*—Applicants must be at least 16 years old and fairly intelligent. Usually the previous educational training is equivalent to that received in the grammar grades of the public schools. Each apprentice is required to enter into a legal agreement which is signed by the parent or guardian. All are placed on probation for a month before being admitted to the school.

*Hours of school work.*—The school is conducted five evenings a week, from 5.20 to 6.45. Each evening is divided into two periods of about forty minutes each. The year is divided into two terms, the first beginning October 1 and ending February 1, the second beginning February 1 and ending June 1. Apprentices may enter at either term.

*Course of study.*—The course given is still in the stage of evolution, but even now presents some very interesting features. The work is planned for four years, and each class represents one term or one-half year. The course of study as at present conducted is here given, beginning with the first year's work, together with the number of periods per week of forty minutes each given to each subject.

**III. C. 3. Arithmetic to percentage—3; spelling—3.**

**C. 2. Arithmetic, percentage to compound proportion—3; English, punctuation, grammar, etc.—3.**

**II. C. 1. "Practical geometry," construction work—3; "Mechanics," mensuration—3; English, drill in punctuation, etc.—1.**

**B. 3. Mechanics—1; English—1; practical geometry—2; drawing—2.**

**I. B. 2. Mechanics—1; English—1; drawing—2; practical geometry—2.**

**B. 1. Drawing—2; practical geometry—2; mechanics—2; talks on citizenship, including elections, and government of city, State, and nation.**

This completes the regular course for which certificates are given.

Class A is a graduate class. The instruction is mostly in free-hand and mechanical drawing. Occasionally some work in trigonometry and calculus is given to the brighter boys. Apprentices are not required to spend more than a year in this class, but are allowed to remain in it until the completion of their term of apprenticeship, which is five years.

The subject-matter of each of these studies is taken, as far as possible, from the work of the shop. For instance, the arithmetic studied is one prepared especially for the school by Mr. Watterson, and the problems are actual problems which are met with in the work of the establishment. The text-book in mechanics is also a special text-book prepared by the teacher of that department, Mr. Womrath, and includes mensuration, practical shop work, etc. The geometry is construction work and connects directly with the instruction in drawing. The subject which is most difficult to connect with the shopwork is English; but even here the connection is made as far as possible by means of letters, orders, etc., taken from the official correspondence. In the talks on government and citizenship the attempt is made to broaden the view and to make good citizens. As yet the result is not as satisfactory as it is hoped that it may be made. The boys do not see what practical use can be made of this, and in consequence their interest is not strong. Mr. Watterson hopes to overcome this by improving the work, making it more vital, and also by developing a sentiment among the foremen in favor of it.

*Prizes, etc.*—Every effort is made to encourage the work of the school. Regular commencement exercises are held in June, at which prizes are given to the boys in each class who have the best and the second best averages for the two terms of the year. The most valuable prize is a gold watch for the boy of the A class who has the best

average. Whenever a boy shows exceptional ability in any department he is picked out for special attention. If he has unusual ability as a draftsman he is taken into the drafting department, where he receives better pay and has opportunities for further advancement. Sometimes boys who show exceptional ability are taken into the office department. In determining the final standing of the apprentice his school work, general deportment, and interest, as well as his ability in the shop, are considered. His complete record is kept in the office, and his parents or guardians are notified of the progress made.

*Teachers.*—The teachers are usually practical men and know the needs of the boys. A plan which promises well is being put in operation. The brighter apprentices, after the completion of the regular course, are put in charge of some of the classes under the direction of the regular teacher. The purpose of this is to develop responsibility and self-reliance in the pupil-teacher and fit him still further for positions of trust. It is the very best training for foremen. It is too early to determine whether the plan will be successful or not.

Throughout the period of apprenticeship and for some years thereafter the brighter boys are encouraged in every way. They are urged to take special courses in Pratt Institute, Cooper Union, or some other evening school of like grade, and every opportunity is given to the boy to show whatever ability he may have.

While this school does not yet fully meet the needs of the apprentice nor come up to the expectations of the director, it is rendering valuable service both in selecting the best boys, who will be the foremen of the future, and in giving that all-around training in the fundamental principles underlying the work of the factory which is so essential to the skilled workman.

#### V. SCHOOLS FOR CLERKS IN MERCANTILE ESTABLISHMENTS.

Clerks and other employees in mercantile establishments can not be trained in a way analogous to that of apprentices in other establishments; the difficulties seem to be somewhat greater. While probably the great majority of large mercantile establishments now have welfare departments of various kinds, not all are successful in maintaining educational classes. Some firms, after years of experiment, have abandoned such work. Among these are the firms of Jas. Hearn and of John Wanamaker, in New York City. One reason given for this abandonment was that the public evening schools could do the same work to better advantage; another was that the time of the clerks could be more profitably employed in other ways.

It is not possible to give a list of the firms conducting educational classes for their employees. Two of the most successful are Sears, Roebuck & Co., of Chicago, and John Wanamaker, of Philadelphia.

In the Philadelphia establishment of John Wanamaker the young people are organized into three classes, which collectively are known as the John Wanamaker Commercial Institute. These three divisions are (1) cash boys, (2) girls up to 17 years of age, and (3) boys, other than cash boys, from 16 to 18 years old. The aim of all the training, educational and commercial, is to make the young employees more efficient.

Besides the general training in the regular duties of the establishment, organized classes are conducted. The smaller boys are given instruction in arithmetic, grammar, spelling, writing, composition, and singing on two mornings a week. The girls also have educational classes two mornings a week. In addition to the branches taught the boys, the girls are instructed in business correspondence, stenography and typewriting, and bookkeeping.

The older boys, numbering about 300, have supper in the store and remain for their school two evenings a week. The branches taught are arithmetic, spelling, writing, commercial correspondence, English, stenography, bookkeeping, the metric system, mechanical and free-hand drawing, and rapid calculation.

A monthly report of the standing and progress of each pupil is made to his parents. The graduates from each of these divisions receive certificates, and promotions are largely based on these. This results in a sort of civil-service promotion, the higher positions being constantly filled by those who have grown up in the business.<sup>a</sup>

A school of a similar kind is now conducted by Sears, Roebuck & Co., in Chicago. This school was the result of a request from the employees themselves. It began soon after the occupation of the new quarters, in January, 1906. There are at present 105 enrolled. A small tuition fee is charged, just enough to pay the salaries of the teachers. The subjects studied are penmanship, stenography, spelling, and business arithmetic. Instruction is given on three evenings a week. The teachers are mostly day-school teachers and Young Men's Christian Association workers, but the intention is to use regular employees for this purpose as soon as the school is fully organized. The interest manifested is at present very strong. Just what will come of this attempt, in what direction it will develop, we can not say. The intention is to introduce other subjects and to widen the scope of the work in the direction of the needs of the employees as rapidly as the resources at hand will permit.

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<sup>a</sup> Welfare Work in Mercantile Houses. Issued by the Welfare Department of the National Civic Federation. Pp. 12-18.

## V. KIND AND AMOUNT OF INSTRUCTION GIVEN IN CONTINUATION SCHOOLS.

### A. CONTENT OF THE COURSE OF STUDY.

On account of lack of material it was necessary to abandon the comparative study of the curricula of the evening schools which had been attempted. Very little notice is taken in the regular school reports of the subjects pursued in the evening schools. Consequently only a few general facts will be noted.

*Elementary evening schools.*—The studies pursued in the elementary evening schools, in which the great majority of the pupils are enrolled, are narrowly restricted to the fundamentals, and include little else than reading, writing, and arithmetic, with a smattering of history and geography. In many places, notably Massachusetts, drawing is usually given, and in other places some attempt is made to introduce such subjects as cooking, sewing, manual training, stenography, and typewriting; but in general little is attempted except the common branches.

*Evening high schools.*—The curricula of the evening high schools are much more varied. Data have been obtained from 14 evening high schools, exclusive of mechanic arts, manual training, and technical evening schools. In these 14 schools 42 different subjects are offered. These are given below in the order of their frequency, with the number of schools in which each study is offered.

#### *Curricula of evening high schools.*

Subject.	Number of schools.	Subject.	Number of schools.
1. Algebra.....	14	22. Commercial law .....	4
2. Geometry.....	13	23. Physiology.....	3
3. Bookkeeping .....	12	24. Trigonometry .....	3
4. Stenography.....	12	25. Economics .....	2
5. English.....	11	26. English history .....	2
6. Chemistry .....	10	27. Sewing .....	2
7. Latin .....	9	28. Cooking .....	2
8. Physics .....	8	29. Psychology .....	1
9. Civics .....	8	30. Analytics .....	1
10. American history.....	8	31. Geology .....	1
11. Mechanical drawing.....	8	32. General history .....	1
12. Typewriting .....	8	33. Commercial geography .....	1
13. German .....	7	34. Municipal government .....	1
14. Free-hand drawing.....	7	35. Civil service .....	1
15. French .....	6	36. Shop work .....	1
16. Spanish .....	6	37. Carpentry .....	1
17. Commercial arithmetic .....	5	38. Wood turning .....	1
18. English and American literature .....	5	39. Electricity .....	1
19. Penmanship .....	5	40. Ship drafting .....	1
20. Architectural drawing .....	4	41. Physical training .....	1
21. Arithmetic .....	4	42. Music .....	1

While it is not possible from these data to draw any definite conclusions, we can see that the emphasis, in the majority of these schools, is still on the side of the course given in the day high school, with a

tendency toward the scientific side. Latin still holds its own fairly well, while stenography, bookkeeping, and typewriting are very much in evidence.

It is impossible to determine the relative popularity of the various courses without data of the number taking each subject, and this we do not have, except for a few schools. In these the commercial subjects enroll the greatest number. Whether the subjects as given in the table represent the demands of the students or not we can not definitely say. It is probable that the courses, in the majority of cases, represent what the school authorities think should be given, rather than the demands of the young people. There is a decided tendency, as far as we can determine from these data, in the direction of commercial and industrial work. Nearly half of the 42 subjects represent this department of training, and while only a few of these are found in the majority of the schools, their prevalence, nevertheless, shows a decided tendency.

The mechanic arts, technical, and manual training high schools represent a different type of training, and one which is receiving more attention than formerly. The curricula of these schools are very similar and present little that needs comment.

In the Young Men's Christian Association classes, as we have seen (p. 103), the emphasis, as far as the number of pupils enrolled is concerned, is in the direction of commercial and industrial subjects, more than half of the students being in these two groups. This would be materially increased if we should include those students in the language and science groups who are pursuing those subjects with the idea of immediate use in the commercial and industrial world.

Although the original idea of continuation school work was a repetition of the work of the day school, we can clearly see, even from the meager data at hand, that it is by no means such to-day. The special needs of the class to be reached are considered more fully, and the courses offered and the methods pursued are in process of change in consequence. The near future will undoubtedly witness a great development in this direction.

#### B. HOURS OF SUPPLEMENTARY SCHOOL WORK.

One of the most difficult problems in supplementary education is to determine when such instruction can most profitably be given. Various plans have been tried in different countries. In Germany we have seen that the tendency is toward the elimination of Sunday instruction, and a movement has been started for part-time day classes. In Wurttemberg this has resulted in the recent law providing for day instruction in the Fortbildungsschulen. Whether this will prove

entirely satisfactory can not yet be determined. In England and the United States very little effort has been made in the direction of day classes for young people who are at work.

It is generally conceded that the young person who is working hard for ten hours a day is not in a condition to receive the maximum benefit from evening classes. It is certainly true that in many classes of our public evening schools there is often shown great listlessness and a general lack of interest. It would be very helpful if we could determine the exact cause of this listlessness. That in many cases it is due to physical weariness seems clear, but it is not at all certain how far this is a determining factor in the general lack of interest. The fact that in such schools as Cooper Union and the Mechanics' Institute of New York City the pupils show such great interest in spite of their long hours of labor makes it probable that physical or mental fatigue is not the only cause. There can be no doubt that the vital relation which the instruction in these schools bears to the daily work of the pupil holds his interest and attention in spite of his physical weariness.

Several factors complicate the situation. In the first place, we know very little about the way in which different kinds of labor affect the general fund of energy, if there is such a general fund. Nor are we yet able to measure the amount or kind of energy left over in individuals after the day's work. This undoubtedly varies so much in different individuals and for different kinds of work that no general principle can be applied. At present all we are able to do is to judge by results. We find that a person who has been at work for a certain length of time does not seem to have the energy for intellectual effort of certain kinds. Whether this is true of all kinds of intellectual effort can be determined only by actual experiment. Again, it may well be that certain kinds of intellectual effort act as a stimulant, and possibly make a further drain upon the vitality which may have detrimental results. This, too, can be determined only by the outcome. As yet we know so little about the relation existing between different mental and physical activities that it is impossible to determine in advance precisely what the effect of a given line of effort will have upon the individual.

The pupils in such schools as Cooper Union and in our evening high schools undoubtedly represent a better type of individual than those in elementary evening schools. It is probable that the former have at the end of the day a greater fund of "surplus" energy than many of the others. The very fact that they are more easily interested would tend to show that this is true. If such is the case, it would probably be unwise to use the methods of the former schools in dealing with all people who are or should be in continuation schools.

There are two definite lines of improvement which are practicable, and concerning the value of which there can be little doubt. First, a more general application of the eight-hour labor rule. This would undoubtedly result in a great increase in the effectiveness of the evening work. The majority of the students in the Mechanics Institute work only eight hours a day; the same is true of many at Cooper Union. The next logical step after a more general application of the eight-hour rule to adults would be a still further shortening of the working day for young people, say under 18 years of age. This might make possible part-time day schools. It would at least be a great help in the evening school work.

The second line of improvement would be at least equally as helpful, namely, a better adaptation of the methods of instruction and of the courses offered to the needs of the pupils. If the students realize that a certain kind of work is vital, they will not only do it, but do it willingly. The less intellectual ability a person has, the less can he be interested in remote ends, and the more must he have immediate ends and interests for his action. In the schools which aim at making up deficiencies in elementary education, the interest which is manifested by the foreign element is due to the immediate ends set before them—of getting possession of the tools of the English language; of being able to talk and write in the language of their adopted country. This motive and this interest are not felt to as great an extent by our own illiterate class. They can already speak well enough to be understood and higher attainments do not appeal to them. Their interest is in making a living. If by going to evening school they can get that which will make it possible for them to earn more in the same time, or earn more easily what they do earn, many of them will attend. If, then, the instruction can be made to furnish this immediate end, it will be more likely to attract and hold this class.

There have been spasmodic and scattered attempts at the establishment of part-time day schools, but no general movement in this direction seems probable for some time to come. As far back as 1868 Fall River had part-time day schools for factory children from 5 to 15 years of age. The agitation against child labor and the passage of compulsory school laws have rendered those schools unnecessary. From 1867 to 1885 Boston had a school for licensed minors where newsboys attended in the morning and bootblacks attended in the afternoon. When the compulsory school laws were more strictly enforced these were discontinued. The report of the Massachusetts Commission on Industrial and Technical Education contains a recommendation for part-time day schools in the following language: "And that provision be made for the instruction in part-time day classes of children between the ages of 14 and 18 years who may be employed

during the remainder of the day, to the end that instruction in the principles and the practice of the arts may go on together." <sup>a</sup>

Just what the results of this recommendation will be we can not now determine. There seems to be no reason why the principle there laid down can not be put in force, but it can only be conjectured when steps to do this will be taken. High schools and trade schools already established might very easily adapt certain courses to meet such a demand. Instruction might be given in the morning to certain classes of young workers and in the afternoon to others. It would be comparatively easy to arrange such courses, and credit could be given for work done in this way.

A combination of the various plans outlined would probably more completely meet the needs of all people than would anyone of them alone.

#### C. QUANTITATIVE COMPARISON OF WORK.

Very little that is definite can be contributed in the way of comparison of the amount of work covered in the various types of school. It is impossible to secure sufficient data on this point. So many complications enter which would materially affect the actual amount of work covered that no general statement which would be of value can be made. A few items will be all that can be given here.

In the Young Men's Christian Association classes the number of recitation hours per year to each course is about 44. This is the median taken from the reports of 156 associations for the year 1901. The range is from 12 hours to 137 hours. The majority of students in the Young Men's Christian Association classes take only one subject, so that the term of 44 hours represents the median total length of time which the majority of these students spend in recitation.

In the public evening high schools the number of recitation hours is about 162 per year. This is the median from 13 evening high schools from which data were obtained. The range here is from 110 hours to 370 hours. As each session is divided into two periods, the total number of hours per year spent on any one subject is 81, nearly twice the time in the classes of the Young Men's Christian Association.

How does this compare with the time spent on any one subject in our day high schools? If we take a subject like algebra, which is usually studied in all these schools, we may arrive at a fair comparison. If we consider their median term to be 36 weeks, and the number of recitation periods per week to be 5, and these 40 minutes

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<sup>a</sup> Report of the Massachusetts Commission on Industrial and Technical Education, p. 21.

each, we have a total of 120 hours per year; this against 81 hours in the evening schools and 44 in classes of the Young Men's Christian Association. In only 3 of the 13 evening high schools does the number of hours per subject reach 100.

Some of the complicating conditions which render a definite statement impossible are here outlined: (1) Account must be taken of the relative capacity of the pupils in the three types of school. There can be no doubt that the pupils, as a whole, in the evening high schools represent a stronger type, intellectually as well as physically, than those in the day high schools. The same may be said to a somewhat less degree of those in the classes of the Young Men's Christian Association. (2) The evening pupils are also more mature than those in the day schools. (3) The very fact that they go to evening school and take algebra, for instance, shows that their interest in it is strong. These three factors may operate to increase materially the amount of work which it is possible to accomplish in a given time, and thus render the disparity between the hours actually spent in recitation of little moment. On the other hand, operating against an equal accomplishment are the following: (1) The hours of labor of the evening school students, in consequence of which they may not be at their best intellectually, and (2) the lack of time for outside study, practically all the time spent on a subject being in the class room. It is impossible to determine the effect which each of these factors has upon the amount of work accomplished.

As only two subjects can be pursued at a time in the evening schools, the day and evening schools can only be compared by points. Taking this into consideration, it seems probable that three years of work in our better evening high schools may be about equal to two years in the day high schools. It certainly could not be equal to more than this. In the majority of schools it would be much less.

An ambitious young person could not, according to this, complete his high school course by evening study, under the most favorable circumstances, in less than six or seven years, if he were expected to pursue every subject. This time could be somewhat shortened by the elimination of certain elements included in the curriculum of the day high school. It would seem that this might be done without lessening the value of the training received, in view of the industrial training the young person is receiving in his daily work.

## VI. THE PLACE AND PURPOSE OF THE CONTINUATION SCHOOL.

*Place of the continuation school.*—In America we are justly proud of our free system of public education, by which it is possible for the boy or girl of any station in life; rich or poor, to secure the best education offered. With no restrictions in regard to race, color, or class, he or she is able to pass through the elementary school, the high school, and in several States, especially in the Middle West and West, the university. This system is peculiarly American and reflects to a great extent the national ideals.

It is generally conceded that it is the duty as well as the right of the State to require a certain minimum of education from its citizens. The only means to attain this which has so far been found practicable is a law requiring children to attend school up to a certain age, generally 14 years. Beyond that point there has been great hesitancy manifested in the employment of compulsion. That is the age when the child begins to be industrially productive and when he is supposed to have in his possession the tools which will enable him to get along fairly well among his fellows. Up to that age the State has not only offered an opportunity for education, but, theoretically at least, has compelled the individual to take it.

There seems to be very little objection at present to the plan of providing at public expense opportunities for further education, even through the university, but it is considered unnecessary and unwise to compel anyone to make use of them. The belief that the State is justified in providing this further opportunity, even though only a comparatively few are fitted to take advantage of it, rests on two main conceptions: (1) That all men are not equal in respect to intellectual ability, and in consequence are not able to profit equally by educational training, and (2) that the selection and training of leaders are essential to progress. Up to within a comparatively recent period the opportunity for further education offered has been along somewhat narrow lines. Consequently the field from which the selection has been made has not been as broad as the ideal of democracy would demand.

There are certain fairly well-defined classes which are not reached by the regular public day schools. (1) Many lack the mental ability to profit by the work in the upper grades and the high school. This training does not adequately meet their needs. (2) Of those who are mentally capable, many drop out of school and go to work at the end of the elementary school, or even before. Some of these are compelled, through poverty, to begin to earn something, either for their

own support or for that of the family. Others find the formal work of the school less attractive than the productive activities of life. They and their parents can see little practical value in the traditional four years spent in the high school, compared with the same time spent in learning some occupation. As we have seen, hardly one-half of those who complete the eighth grade ever enter the high school, and only about one fifth graduate. When we consider the small number of these latter who enter college or university life, we see that the "out-of-school class" above 14 years old greatly out-numbers that in school.

Great effort is being put forth at present to enlarge the field of education, especially in the direction of giving a better representation to the very important industrial element. Since the great majority of young people will enter commercial or industrial life, the demand is growing more and more insistent that public schools supported by public money shall offer opportunities also along these lines; that training for the actual life work in which these young people will engage is absolutely necessary. There can be no doubt that the criticism of our public school system as at present conducted is merited. Dean James E. Russell, in his annual report for 1905 (p. 156) says: "It is not difficult to believe that boys and girls who have been roused to high ambitions in their school course should conceive a hostile, not to say anarchistic, attitude toward a society that does not permit them to secure competent instruction for their occupation as men and women."

This feeling, which is becoming more and more common, has shown itself (1) in the establishment of technical, mechanic arts, and manual training high schools; (2) in the opening of trade schools by individuals, societies, and lastly by the public school authorities; (3) by the effort to introduce industrial subjects into the elementary schools. All these movements are making it possible for many more children to profit by the opportunities for further education. We may expect as results a wider selection of leaders, increased efficiency in production, and a more intelligent and humamer life for the worker, and consequently for all.

To what extent all these improvements will ultimately reduce the enormous withdrawal of pupils from our schools we can not determine. They will be amply justified if they do this even in a small degree. The warmest advocates of the new plans must admit that there will be a great many who will not be reached. To provide for these is the proper field of the continuation school. Its purpose is to help those who are already at work, to afford them opportunities for development along broader lines than are found in their daily work, and to make them more efficient citizens. There will

always be a place in the educational system for schools of this type, and the comparative need for them will be determined by the number not reached by the regular schools. Just now the need is especially great.

*Purpose and aim.*—The general purpose of all education is the same—to fit the individual by means of his personal development for active participation in the social order of which he is a part. This is shared alike by the regular day school and by the continuation school. Since different social orders demand different kinds of training, the particular aims of education suited to one country will not be adapted to the conditions in another. This is as true of the continuation school as of any other educational agency. Hence it is impossible to adopt in toto the plan followed in any other country. The aim of the continuation school in Germany is largely to make "efficient industrial units," and the system and methods employed are well adapted to this end. The results from this point of view have been very satisfactory. In America this aim is not sufficient; there must be also included a broader training for citizenship. While in any country the aim of the continuation school and that of the regular school must be the same, the immediate aims and methods will depend on the conditions under which the work is done and the needs of the people. These needs may materially affect the methods employed.

Continuation schools in America are at present and for some time to come must be differentiated along three main lines. First is the work among foreigners, who come here in such great numbers. They usually know little of our language and less of our customs and ideals. The work of making these over into citizens is no small labor, and the method employed can not be the same as that used for other classes. To begin with, they must be taught in the shortest possible time to read and write English. They must also be introduced to our customs and to the ideals peculiar to America. After the work of assimilation has gone so far that the foreigner becomes reasonably well adjusted to the new conditions he will, if he needs any further help, fall into one of the other classes to be described, for there are as great differences among the foreign immigrants as among ourselves.

In the second line comes the work among the illiterate. Hitherto the elementary evening schools, which are essentially for illiterates and foreigners, have been concerned with making up deficiencies, with enlarging the field of the elementary school, and repeating its work. It scarcely needs to be said that this is of the utmost importance. Democratic ideals and illiteracy can not exist side by side. No person can perform his proper function in such a society as ours if he does not have at least a reasonable command of the ordinary vehicles

of communication and of business; but such work alone is not sufficient for the making of good citizens. Society must, in self-defense, if for no other reason, provide further means of training.

The majority of the native Americans in our elementary evening schools represent a lower type of ability, intellectually, than those in the evening high schools. This difference will be still more marked in the future. Work of a higher type does not appeal to them, nor is it what they need. They need most training along lines which will make them self-supporting citizens. To this end there should be introduced the trade and industrial elements, which will tend to increase the efficiency of the laborer. There can be no question but that the laborer who is able to support himself and his family is thereby made a better citizen, not only in the sense that he is no longer a burden upon society, but that he becomes more self-respecting and responsible. It is probably true that for many of this class the greatest personal development can be secured by actual participation in productive activity, supplemented by work in the continuation school along the lines suggested. Another valid reason for the general introduction of the trade and industrial element is that in this way greater interest can be secured and larger numbers can be reached. In many cases, if not in all, the necessary work in arithmetic and English can be grouped around the industrial studies as a center. This work will then really function in the life of the laborer. Much can undoubtedly be done toward counteracting whatever narrowing influence the purely vocational work may have, both by the method of treatment of the subjects studied and perhaps also by the addition of other subjects so chosen and adjusted that they take their starting point in the industrial interest of the individual.

The third kind of work for continuation schools is that for young persons of considerable natural ability and ambition, who are fitted by nature to occupy positions of responsibility. From this class come many of the strongest leaders of society. To reach these persons with adequate training and stimuli for development along useful lines will greatly broaden the field for the selection of leaders.

The essential conditions of progress, especially in a democracy, are (1) the selection of leaders whose ideals are in harmony with the ideals of democracy and (2) the training of these in such a way that they will minister most directly to the needs of the people. Our schools, as now conducted, are agencies for the selection of leaders, but the field from which these leaders are chosen is too narrow and the types of leaders chosen do not represent all classes of society.

The immediate aim of the higher continuation schools will be determined, as with others, by the needs of those whom they are designed to reach. We know that the needs of this class are more varied even than in the case of the elementary school. It would seem,

then, that the continuation school should be so conducted that it will interest all who can profit by its training, and that it should offer opportunities in many kinds of work. Thus far the greater emphasis in our public evening high schools has been on the subjects pursued in the day high school—i. e., those preparing for college and university. This certainly is perfectly justifiable if the majority of the young people who can be reached by this agency wish to prepare for college, or if they can in this way become better prepared for their work. It needs no statistics to show that the reverse is the case. There are some, we know, in our evening schools who do desire to prepare for college and are securing this preparation. It is right that the schools should afford this opportunity. But the purpose of these schools is by no means realized if the work stops here, or, we may say, if it begins here. The great majority of the young people who are out of school are not looking forward to literary pursuits or to other occupations for which a college education is essential.

The interests and needs of the majority are in commercial, industrial, and technical courses. Their original interest in these courses is greatly strengthened by the fact that they are no longer dealing with the theoretical side of life; they are in the midst of its activities, of its fierce competition. They feel the pressure of economic conditions. They are eager to secure any means by which they may be able to work to better advantage, anything which will enable them to command better salaries or higher positions. The great interest shown by young people in all the courses of the Young Men's Christian Association, of evening schools, and of other institutions which, in their opinion, offer opportunities for this help, shows that there is no lack of ambition nor of willingness to work. From these considerations it is clear that the principal work of the continuation school of the higher type should be along technical, commercial, and industrial lines, while still offering courses which are more distinctly preparatory for college and university work.

Nor is the work of the continuation school complete even with the training of the classes mentioned. To fulfill its mission completely, it must offer opportunity to all men and women who are at work and need further educational training. This may be by lectures, by social clubs, by training along special lines. In a word, the continuation school of the future must take the individual where the regular day school leaves him, and give him the opportunity of further educational training along lines suited to his individual needs. This complete ideal is even now beginning to be realized in the various kinds of evening schools, public lecture courses, and extension courses generally. The only difficulty with it at present is that the lines of training offered do not meet the greatest needs.

Educators are coming to realize that an education which does not fit one in some measure for a vocation lacks an element not only essential to the success of the individual, but also essential to true culture. It thus defeats its own end. The traditional courses of the day high schools, which are the models of our evening high schools, are what they are largely because originally they were themselves vocational and distinctly prepared for the ministry and to a less extent for teaching and literary pursuits. While they have been changed to some extent, yet the backbone of the work to-day has the same general character. The attempt has been made to justify this by the assertion that this line of study will secure the best development of all, whether they are preparing for a particular vocation or not. It has taken many years of experience to change this idea. The fallacy of it is now becoming apparent. The interest of the individual, his preparation for participation in social activity, the normal development of his powers, all demand a vocational element in his education.

But this vocational element must not be the only one. Two elements must enter into a complete preparation for life activities. The first may be called the practical element, that which prepares one for certain kinds of labor, for occupation, and the second is the emotional, intellectual element, through which one comes to appreciate values, to view his own life and activity in its relation to the social order. The latter is what has been termed liberal education or culture. The tendency of division of labor has been to separate the emotional from the practical; to eliminate from certain kinds of industry all emotional, appreciative elements, and to combine these in other activities which to some degree lack the practical side. The tendency in education has been to emphasize this separation, to give to those who are in industrial pursuits little of the imaginative element which would enable them to appreciate the value and place of the work in which they are engaged.

Just now the movement for industrial education is almost entirely toward a distinct preparation for certain kinds of labor—toward assisting the individual along practical lines. The emphasis on this practical side is due to the lack of provision to this end in previous schemes of education, and to the great need of a certain class of people at present, for help in becoming self-supporting citizens. Education for this class can not stop here if it is to be really effective. It must "prepare the individual in advance for complete or balanced participation," as pointed out by Professor Dewey. The industrial and commercial classes, as we have seen, are those who most need the appreciative, cultural element in their training, because they do not get it in their daily work. Any scheme of education which simply prepares them for performing such activities, while it will probably

do more good on one side than the traditional type, will still tend to emphasize the separation of the two essential elements and result in a one-sided development. In America, more perhaps than in any other country, we can not have this separation of classes. Every individual, to be a good citizen, must be well balanced with respect to these two elements. The fact that by the division of labor some are denied by society the opportunity of securing, in their daily occupation, one of the essential elements of normal development, makes it imperative for society to provide the means for attaining this, and to make the greatest provision where the need is greatest.

One of the great problems for the educator to-day is to secure this appreciative, liberal, cultural element from studies which aim to prepare for industrial activities. It can not be foisted on the student or the worker. Attempts have been made repeatedly, but without success, to introduce into evening schools for this class of people the subjects of the day schools which are considered broadly cultural. They do not touch the life of the industrial worker, and therefore it is impossible in most cases to interest him in them. If he is compelled to pursue such studies, he will usually do it only in order to obtain the other training which he wants. We must start with the dominant interest of the individual and work outward from this. Industrial and commercial subjects will necessarily form the core around which other studies are grouped in such a way that their vital significance will be clearly appreciated. It is in the continuation school that the need for this grouping is felt most keenly, both because of the class of people reached and because the amount of time available for educational training is so small. How this can be accomplished is one of the most important problems for the future to solve.

Continuation schools have a work to perform which is of the first importance, not only because they have a larger field than any other class of schools except the elementary schools, but also because the need of people of more advanced age for training—training both for their vocations and for intelligent citizenship and participation in the social order—is greater than is the need of younger people. The work of these schools will increase in scope and value according as the particular needs of individuals are carefully studied and as the methods are adapted to meet these needs.

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DEPARTMENT OF THE INTERIOR :: BUREAU OF EDUCATION

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# AGRICULTURAL EDUCATION INCLUDING NATURE STUDY AND SCHOOL GARDENS

By JAMES RALPH JEWELL

SOMETIMES FELLOW OF  
CLARK UNIVERSITY

---

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## LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,  
*Washington, May 28, 1907.*

SIR: I have the honor to transmit herewith the manuscript of a monograph entitled "Agricultural Education, including Nature Study and School Gardens," by Mr. James Ralph Jewell, of Louisiana. This monograph was originally prepared as a thesis for the degree of doctor of philosophy at Clark University, and in its original form was accepted by the faculty of that institution in partial satisfaction of the requirements for the degree. It presents an unusually comprehensive survey of the provisions for agricultural education and for instruction in closely related lines in various parts of the world, but with especial reference to our own country.

There is at this time a very unusual movement in progress looking to the wide extension of agricultural education among the elementary schools and high schools of the several States of the Union. This movement has undoubtedly been stimulated by the growth of the agricultural and mechanical colleges endowed by the National Government under the Morrill acts of 1862 and 1890, together with the recent activity of the Department of Agriculture at Washington in the encouragement of all movements looking to the development of such instruction. It is, I think, clear that this movement has in it the promise of great benefit to both the economic and the educational interests of the country at large. In order that such benefit may be realized to the full, however, it is important that information regarding experiments in agricultural education which have already been made in this country and in foreign lands should be rendered available to those who are charged with the direction of the new schools and courses of study. It is with a view to furnishing such information where it is most needed and can be most effectively used that the issuance of this number of the Bulletin of the Bureau of Education is proposed.

I have the honor to be, very respectfully,  
ELMER ELLSWORTH BROWN,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.

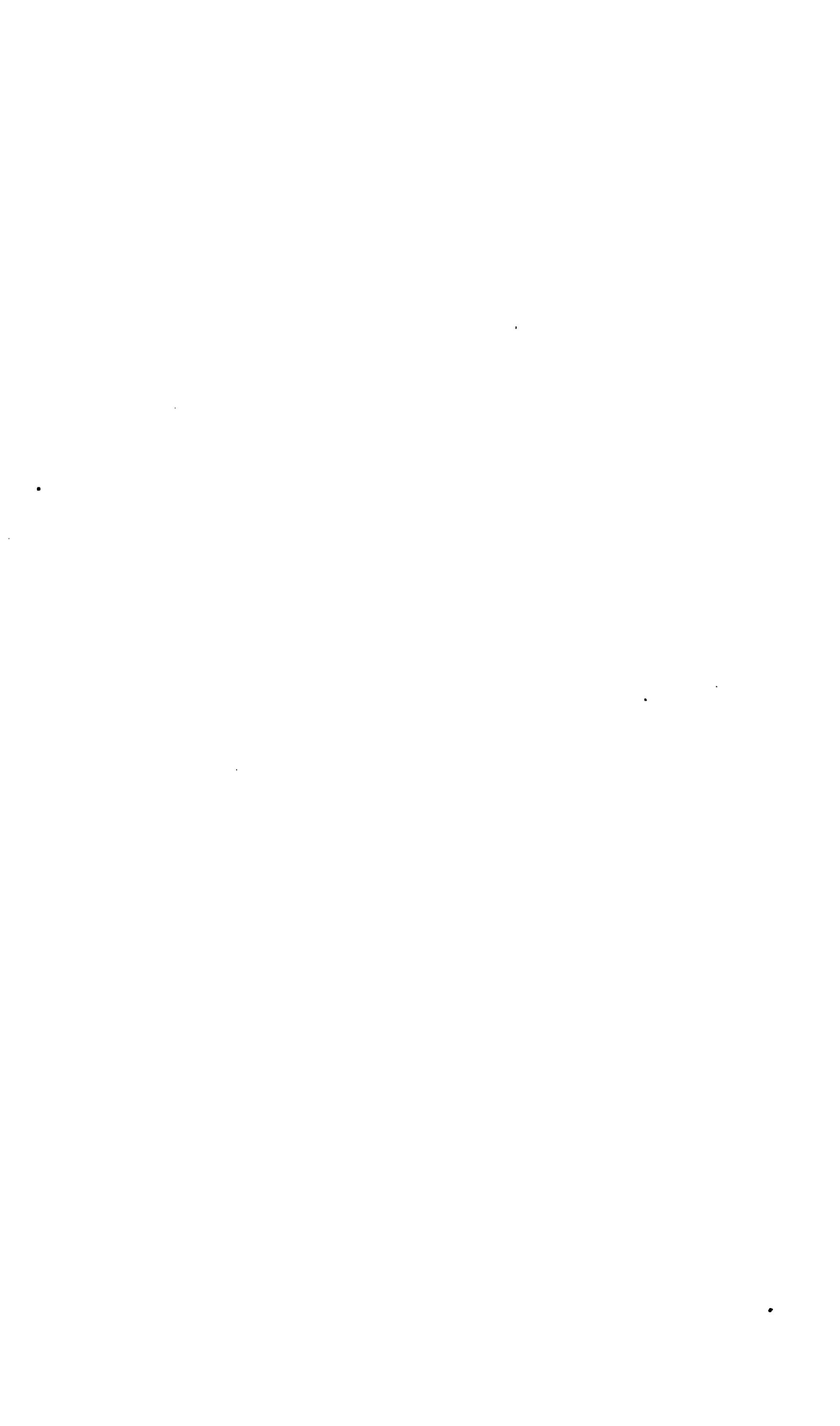


## AUTHOR'S PREFATORY NOTE.

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One who has undertaken any study which is largely a collection and compilation of data from varied and scattered sources owes a debt of gratitude to many people but for whose assistance a well-rounded work would have been impossible. The present writer is no exception. To President G. Stanley Hall and Dr. William H. Burnham, of Clark University, his thanks are due for their critical suggestions throughout the entire preparation of the manuscript; and to Dr. Louis N. Wilson, the librarian of Clark University, for aid and resources beyond measure.

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## AGRICULTURAL EDUCATION, INCLUDING NATURE STUDY AND SCHOOL GARDENS.

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### CHAPTER I.

#### NATURE STUDY.

At this time a definition of the term "nature study" may seem somewhat superfluous, but the words come so near meaning all things to all men that it may be well in the beginning to decide how we shall use them. There are those who insist that nature study is not primarily a subject of study, but a method of study. Prof. Patrick Geddes says: "Nature study is not a new subject, to be squeezed into already crowded programmes, but the symptom, and in great part the leaven also, of the progressive transformation of these."<sup>a</sup> Prof. L. H. Bailey says that nature is studied from the standpoint of the child, who is encouraged toward close and careful observation of the world around him; in a word, "he is taught to see what he looks at and to draw proper conclusions from what he sees, and therefore comes into personal relation and sympathy with the object."<sup>b</sup> This makes nature study, if it be a method, nothing else than the so-called "scientific method" applied to the casual observations of the child, who is to be taught to reason from cause to effect. But this can not be expected of the child in his first school years; for him such a view of nature study could not obtain; on the other hand, he must be taught to observe—and why is it not much better to tell him what to look at than to leave him to look where he may?—while he is taught the larger relations of things by analogy rather than by abstract processes of reasoning. For example, after a heavy rain the teacher may call the attention of the children to the effect of the little streams by the roadside, and then explain how, in like manner, our great rivers have made and changed their courses. It seems, then, that nature study is hardly a method. Best of all, perhaps, is the definition of Prof. C. F. Hodge, in his ideal book, *Nature Study and Life*: "Nature study is learning those things in nature which are best worth knowing, to the end of doing those things that make life most worth living." Epigrammatic, perhaps, but true, every word of it.

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<sup>a</sup> Geddes, Patrick. *Introductory course of nature study*, p. 1.

<sup>b</sup> Bailey, L. H. *Nature study idea*, 1905, p. 15.

Nature study came into our schools after efforts to teach agriculture had failed, owing to lack of demand for it and want of preparation among the teachers, after the "object-lesson" fad had begun to die away, and when so-called "elementary science" proved too dull even to awaken thoroughly the interest of the child. That nature study has taken an agricultural trend, to some extent in our cities and to a predominating extent in rural sections, is not strange; the common things of the country are needed to round out the knowledge of the penned-in city child, and to lead him away from the city and its necessary evils as much as possible, while a sympathy with their life work and surroundings—the very essence of nature study—is more needed among the children of our country homes than anything else. Experience has shown that the innate curiosity of the child may be directed toward nature in a way which will make him a keen observer, and during his comparatively few years of formal school life the acquisition of facts alone is of less importance to him than are correct habits of observation and inquiry.

It is hard to draw a sharp line defining the geographical limits of nature study. In most of the northern countries of Europe such subjects as gardening, agriculture, and horticulture are taught in a very practical way, but the instruction is so technical as hardly to be considered nature study. In some of the countries of southern Europe, where school gardens have not as yet been made a part of the educational system, more is done in a direction corresponding to our idea of nature study. In Portugal the prescribed higher elementary course of instruction includes "elementary notions of physics, chemistry, and natural history, as applied to industry, agriculture, and hygiene."<sup>a</sup> In both Italy and Hungary nature study work is made very technical. In Germany it is even more formal and full of examinations, approaching more nearly to elementary botany than to nature study. It seems very stiff and wooden to us, but the German children, perhaps because they have never had a glimpse of the dynamic side of it, seem to enjoy it thoroughly, even though there are infinite detail and minutiae in the work, and though the children have no property right in the materials raised and used. Technical instruction in agriculture has never been introduced into the primary schools of the Netherlands; and here, more than anywhere else on the Continent of Europe, nature study is seen in its best form. It is found in the infant schools, for children under 5 or 6, and since 1889 has been obligatory in all primary schools, where it is taught very thoroughly. Nature study courses are given in every teachers' training school in Holland. Mr. J. C. Medd, one of the experts of the British education department, reports that in the primary schools in Holland natural objects are

<sup>a</sup> Leitao. Technical instruction in Portugal. Special reports on educational subjects [England], vol. 8, 1902, p. 449.

taken into the school for study, and then the things are studied out of doors; lessons are given under various trees on the varying structures and properties of these trees. Country walks are taken to collect plants, insects, etc. The whole of this instruction is given in school hours.<sup>a</sup>

Coming to England, we find nature study in a surprisingly good condition, considering the fact that there is such a universal tendency there to judge of the value of things by examinations, a method to which this subject does not readily lend itself. The nature study exhibition and conferences<sup>b</sup> held in London during July and August, 1902, marked a great step in advance, by bringing to the notice of the nation the efforts already made in this direction, and the unanimously favorable opinion of them by the more progressive educators of the country. Profs. Lloyd Morgan and Patrick Geddes, Mr. M. E. Sadler, and Sir Joshua Fitch, as well as Lord Balfour and other prominent members of the nobility, addressed the conferences in advocacy of such a study of natural objects as obtained in the better schools of the United States which had sent exhibits.

Nor has all this been without effect. The better schools, such as Eton,<sup>c</sup> have published their courses in nature study, school gardens have greatly increased in number, and, above all, in the New Code of 1904 the board of education took a favorable stand upon nature study as a subject of study for all English elementary schools. The New Code differs fundamentally from all that have preceded it—hence its designation, the "New Code." The code of 1900 changed the old system of giving grants to schools for specific subjects taught, to that of "block" or "principal" grants, saying that instruction should be suited to the circumstances of the children and the neighborhood, but containing a list of subjects which must be taught, and one of subjects which should be taught when, in the opinion of the inspector, circumstances made it desirable. The principal object of the New Code is "to exhibit, without undue elaboration, the course of instruction as a connected or coherent whole,"<sup>d</sup> which makes it one of the most important educational documents England has seen for many years. This prescribed course is woven around "knowledge of the common phenomena of the world," or nature study. "The purpose of the public elementary schools" is to assist "both girls and boys, according to their different needs, to fit themselves, practically as well as intellectually, for the work of life.

<sup>a</sup> Medd, J. C. Nature study in Holland. Special reports on educational subjects [England], supplement to vol. 8, 1902, p. 10.

<sup>b</sup> Nature study exhibition, 1903.

<sup>c</sup> Hill, M. D., and Webb, W. M. Eton nature study and observational lessons, 1903.

<sup>d</sup> New Code of 1904, Section III, p. 6.

<sup>e</sup> *Ibid.*, Section III, p. 11.

With this purpose in view, it will be the aim of the school to train the children carefully in the habits of observation and clear reasoning, so that they may gain an intelligent acquaintance with some of the facts and laws of nature." County councils are urged by the education department to "provide suitable schoolbooks for the use of those who are in the midst of the busy and interesting life of the country. The reading books and lessons themselves should bear some direct reference to rural conditions."<sup>a</sup> Section VIII of the New Code consists of specimen courses of "object lessons" (nature study) in use in English rural elementary schools. Some of these are very good, some are too much like elementary science, but on the whole they show great progress. Plans of several successful school gardens are given.

This places England well in advance of Scotland so far as nature study is concerned, though the demand for it from the teachers of Scotland is such that the universities give summer courses for them. The Scotch education department suggests as part of the course for rural schools the study of newspaper market reports, with exercises and calculations based upon them. Several of the agricultural colleges of England have made provision for training teachers in nature study by means of special summer courses, in addition to the courses given at convenient centers on Saturdays for those already in the teaching profession who see the need of it. Yorkshire College held such classes on thirty-five Saturdays between October and June. The Midland Agricultural and Dairy Institute gave three summer courses of two weeks each during the 1904 vacation, and other colleges gave like courses of varying length.<sup>b</sup>

Nature study suffers in Australia, as it has in England, from the system of payment by results. There are sporadic instances of the teaching of this subject in most of the States. In South Australia there is a definite movement on foot toward its introduction into the elementary school curriculum, while in Victoria, where the dynamic side of nature study is being more and more emphasized, the work is more like that done in the United States than is that of any other country. Both the government and the educational department of Victoria have recognized that a new country, such as theirs, where the helpful and the destructive forces of nature are not well known, and hence can be but poorly utilized or counteracted, as the case may be, is in greater need of such a study than an older country. About the middle of March, 1905, a boy in one of the elementary schools discovered a natural enemy of the destructive codling moth, which costs our own apple growers millions of dollars annually. This discovery alone will save Victoria many times the cost of instruc-

<sup>a</sup> Annual reports, Board of Agriculture, London, 1903-4, pp. 104-109.

<sup>b</sup> *Ibid.*, p. vii.

tion in nature study for decades. The education department furnishes all teachers with pamphlets on nature study and gardening. The School Paper, really a series of little supplementary readers published monthly, with different editions for the different grades, contains nature-study readings, and the Arbor Day numbers each year are models in this respect. The Educational Gazette, published monthly by the department for all Victorian teachers, has a regular nature-study department, with now and then the larger part of some number filled with extracts from the better publications on topics of the kind. Twice in the last three years one of the nature-study experts of the State has published in these gazettes full outlines of a course which might easily be followed.

Nature study occupies a somewhat prominent place in the schools of New Zealand, also, where it is modeled closely after the work outlined by the educational department of Ontario. Certain of the New Zealand text-books are now generally used in Tasmania and Victoria.

In the Philippines, nature study is treated as a synthetic subject, upon which to correlate the primary school course; for instance, the official course of study requires number work to be done by the use of natural objects. School gardens are fast increasing in number, and nature-study readers are prescribed for grades four and five.<sup>a</sup>

Coming to our own continent, we find nature study perhaps more widely spread through the United States, but the best work is probably done in parts of Canada, where Macdonald Institute furnishes to teachers wishing to become proficient in both matter and methods advantages not equaled elsewhere on the continent. The prescribed course of study of all the rural and graded schools of British Columbia includes nature study, and inspectors see that it is properly taught. Passing a rigid examination in it is necessary to enter any high school of the Province. Nature study is obligatory in all the free public elementary schools of the Northwest Territories in Standards I, II, III, and IV, and agriculture is added in Standard V. The schools are supplied with a programme in outline, which is a minimum requirement. "The pupil must study the animal, the plant, and the soil themselves, other than book descriptions of them. He may only consult books after he has made his observations." In Manitoba nature study is obligatory in all eight grades of the public elementary schools, but it is called elementary science in the higher four grades. The entire work is laid out by the advisory board of the Province, though much is left to the teacher's discretion in meeting local conditions. The programme is admirable and is meeting with great success. The superintendent of the Winnipeg schools writes:

<sup>a</sup> Courses of instruction for the public schools of the Philippine Islands, 1904, pp. 5, 6, 12.

"The interest taken by the teachers is genuine, and among the children this interest rises to the height of enthusiasm."

Newfoundland, with her triple educational system, is not able to introduce any subject simultaneously into all her schools, and up to the present little has been done toward the teaching of nature study, but the superintendent of education of the Church of England has informed me that he is working out a plan to be placed in the syllabus soon. In Prince Edward Island there is very little of this work done aside from that at the Macdonald consolidated school, which will probably act as leaven, as has been the case in the other Provinces. "Nature lessons with especial reference to agricultural pursuits" are given in all the public schools of New Brunswick, instruction in this subject is given in the provincial normal school, and the government grants a bonus to teachers and schools that will establish and carry on instruction in nature study in connection with school gardens.

In both Ontario and Nova Scotia nature study is an integral part of the provincial school system, but there is this difference: In Ontario the work given in the first four forms is really a very elementary course in agriculture, introductory to the strictly agricultural course in Form V, as may be seen from the published outline of the work; while in Nova Scotia, on the other hand, there is prescribed "the noting, examination, and study of the common and most important natural objects and laws of nature, as they are exemplified within the range of the school section or of the pupil's observation. There should be a short nature lesson given every day on the daily collections and observations of the children themselves—not on the statements of teachers or books."<sup>a</sup>

The status of the schools of Nova Scotia is a reflection of the masterly mind of Dr. A. H. MacKay, superintendent of education for the Province, and this holds with especial force in relation to nature study, for it is due to his influence alone that Nova Scotia stands at the head of the Dominion in this respect. One of his innovations, which is meeting with approval in many parts of the Dominion and of the United States, and which has been taken over bodily into the Denmark schools, is his compilation and introduction of a 4-page circular,<sup>b</sup> two copies of which are placed in every school of the Province, and in which are kept the observations of the children of the schools concerning things happening right around them. One copy each year is filed with the school register for reference, the other is sent to Doctor MacKay, who thus has at hand the "local nature observations" of the entire Province. There are spaces for a general description of the physical conditions of the neighborhood, of the

<sup>a</sup> Nova Scotia manual of school laws 1901, pp. 111, 112.

<sup>b</sup> A copy of this circular is contained in the Appendix.

"time first seen" and the "time when becoming common" of some 40 wild plants, a dozen cultivated plants, a number of meteorological phenomena, and the migration of more than 20 common birds. These things have been the object of study of the Botanical Club of the Royal Society of Canada since 1891. During 1905 Doctor MacKay was able to turn over to it careful and complete observations from over 300 schools of Nova Scotia -representing many times that number of pairs of eager eyes. It would have taken the botanists years to obtain a like mass of material, and the data would have been far less accurate, since these school observations are made every day of the week, instead of only once a week or at rare intervals of leisure, as would necessarily have been the case with the scientists, crowded five or six days a week with business or teaching.

The provincial normal school of Nova Scotia, which is affiliated with the college of agriculture, gives courses in nature study, especially during the annual summer school, but it is at the Macdonald Institute, at Guelph, Ontario, that nature study may be said to have its home on the American continent. This institution was founded in January, 1902, by Sir William C. Macdonald, for the purpose of "providing courses of instruction and training in nature study for teachers in rural schools, and of providing courses in domestic science for young women from country homes, and others." Two magnificent buildings have been erected on the campus of the Ontario Agricultural College and equipped in the best manner possible. It was recognized from the first that if nature study were to be introduced into the schools of the Dominion and made a permanent part of the educational system, the first requisite was competent teachers, hence the best of opportunities must be provided to make them efficient. Macdonald Institute is sending out yearly a body of experienced teachers who have done special work in nature study, and who are better equipped to teach it than perhaps any group of teachers engaged in the same work in the United States. This institution now offers a normal course of one year and four three-months courses for actual teachers each year. Each of the short courses is attended by thirty or more teachers from the five eastern Provinces, each of whom receives traveling expenses, free tuition, and a scholarship large enough to meet necessary expenses, this provision to extend over the first three years—1904-1906. In addition, the Provinces concerned have in many cases provided substitute teachers to take the places of their short-course students to enable their better teachers to take the work without loss of situation or salary. These teachers do the same work which they will later expect their classes to do, the various subjects of the course being school gardens, agriculture, botany, zoology, physics, chemistry, bacteriology, nature in literature, manual train-

ing, and methods of teaching. As at the Hyannis (Mass.) Normal School, great attention is given to the correlation of the other subjects with nature study and to the way it should be taught to give it its true value as an educational factor. Free bulletins are published by the institute, and every Canadian teacher is urged to write to it freely concerning experiences in practical teaching, or to ask any questions.

This "Macdonald movement," which included consolidated schools and school gardens, nature study, and manual training in every elementary school, has not been without result. As one phase of this movement, a "Macdonald consolidated school," equipped among other things for nature study, was established to serve as a model in each of the Provinces of Ontario, New Brunswick, Nova Scotia, and Prince Edward Island. While forming a part of the school system, these schools were to receive aid from the Macdonald Fund for three years. The object lessons thus furnished have had considerable effect. The three-year period of aid having expired for the Nova Scotia consolidated school in 1906, the people of that Province assumed almost the entire cost of maintaining it. Moreover, \$36,000 has been voted to help consolidate schools, with the result that 53 schools have been consolidated into 22 effective ones; nature study is required in every school in the Province. In New Brunswick there have been organized 4 large consolidated schools, each with nature study and school garden. The educational department of Ontario offers liberal grants to all schools maintaining school gardens, publishes an outline of nature study obligatory on all pupils of the first four forms of the public schools, and makes a two-year course in agriculture optional "in those lower schools where the staff, equipment, and accommodations are adequate."

No one alive to the present status of education in the United States needs to be told of the spread of nature study during the past few years. It is now an integral part of the course of study in several of the States. In 1903 the National Council of Education appointed a committee of five on industrial education in schools for rural communities, which studied the question for two years and recommended among other things<sup>a</sup> that elementary agriculture, as such, ought not to be taught in the schools before the fifth year, while nature study should be taken up in the first grade and carried on until the elements of agriculture might take its place. Competent lecturers on nature study are in great demand for teachers' institutes and summer schools, and the market is almost flooded with books on some phase or other of this subject, many of them so crude and technical as to show what

<sup>a</sup> Industrial education in schools for rural communities. Report committee of five, National Educational Association, 1905.

an early stage the subject is in. A number of States publish illustrated leaflets for the purpose of interesting children in the subject. The Rhode Island College of Agriculture publishes monthly *The Nature Guard*, sent free to any boy or girl who asks for it, a large number of the names on its mailing list being from other States of New England than the one supporting the movement. The children are encouraged to write to the director of the work about their observations and discoveries, and to ask any questions they or their teachers are puzzled over. The New Hampshire College of Agriculture has published a series of such leaflets. The Ohio State University publishes a series of agricultural extension bulletins, and others are published in Maine, Michigan, Pennsylvania, Missouri, and New York. Hampton Institute, Hampton, Va., began in 1901 the publication and distribution through the Southern States of monthly nature-study leaflets for teachers, which are models of their kind. They are furnished to Southern teachers at quite nominal rates, and to others at about the cost of production. The material is not only written by experts, but it is expressed in interesting style and made attractive with illustrations. Cornell University offers a teachers' course of two years in nature study and school gardening, but much more is really accomplished in this field by means of the extension work of this department of the university, which makes use of lectures, leaflets, correspondence, and the organization of pupils into clubs, with the object of "interesting teachers and pupils of public schools in nature study, with special reference to agricultural conditions." In 1905 there were 486 of these "junior naturalists' clubs" in New York, with a membership of 14,318 children, whose dues are a letter or a composition a month on some one of several topics suggested in the monthly publication of the organization.

Nine-tenths of the rural and village schools of Missouri have adopted the 1905 course of study prepared by Mr. W. T. Carrington, the State superintendent of schools, which urges that "all the formal subjects may be taught to better advantage through a proper correlation of each with nature study and literature." Nature study is given a definite place in the curriculum during the first four years, with the purpose of "putting the child into sympathetic touch with the world of nature in which he lives, and to use this as a means of educating him." Nature study is now included in the uniform course of study for the elementary schools of Indiana, the subjects being largely from the plant and animal life of the farm and garden. At the summer schools of the agricultural colleges of Nebraska, North Carolina, Connecticut, and possibly other States, courses in nature study for teachers are given. Hundreds of southern teachers annually take such courses in the North Carolina school mentioned, or in

the great summer school of the South, in session each summer at the University of Tennessee.<sup>a</sup>

Since the publication in 1901 of the official course of study for the Indian schools of the United States<sup>b</sup> nature study has been a compulsory subject of instruction in these schools. Here it has proved itself of special value in the teaching of English, for the little Indians can be induced to talk freely about the objects studied because of their natural interest in such things, and the consequent loss of their self-consciousness.

In deciding what kind of work in the field of nature study one should give to school children, the standpoint of Dr. C. F. Hodge, already quoted, seems to me to be the proper one. After pointing out that the purpose of nature study is "the learning of those things in nature that are best worth knowing, to the end of doing those things that make life most worth living," Doctor Hodge goes on to show that the things best worth knowing, for this end, are fundamentally the relations of the individual to nature and its forces, toward life in general, both animal and vegetable. Nature study, well taught and with this end kept constantly in view, will produce the highest of all educational values—the proper response of the individual to his environment.

Unless there be gardening, the work of the first two grades must and should be mainly that of observation rightly directed by the teacher, but by the third year the economic relations of plants and animals may well be brought to the attention of the children. I have known few young boys who were not seemingly natural enemies of toads until they learned the economic value of the little creatures—and none who were not their friends afterwards. Any child would rather have an apple that is not wormy; let him learn the cause of the wormy apples and you have a new force in the horticultural world, not to mention the encouragement offered birds for nesting around the house and orchard by the provision of nests and food, rather than the killing of the birds and the stealing of the eggs, as has too often been the case.

Nature study may be made of as great ethical value as economic, by putting the child in the place of other people whose rights he has not appreciated before, and hence has failed to respect. The suggestion to a child that he may raise a tree of his own will give him the desire to do so; peach pits are easily supplied, and the lesson in practical ethics is well under way. "Some real knowledge of the amount of care, time, patience, and money, and of the chance for

<sup>a</sup> The teaching of agriculture in the rural common schools. Ninth report, committee on methods of teaching agriculture, Association American Agricultural Colleges and Experiment Stations. Office of Experiment Stations, circular 60, 1905, pp. 7, 8.

<sup>b</sup> Reel, Estelle. Course of study for Indian schools, 1901.

success or failure in raising a shrub or tree, will do more in getting a boy voluntarily to respect public parks than all the police which a city can afford to place on watch over it."<sup>a</sup> The good teacher, moreover, will direct the religious feelings of the child to nature, with the certainty of adequate response. There is nothing in nature which man has not worshiped, nor which primitive man to-day fails to worship—the stars, sun, moon, wind, clouds, water, rocks, flowers, trees, animals. President G. Stanley Hall urges that "the sentiments on which the highest religion rests are best trained in children on the noblest objects of nature."<sup>b</sup>

The aesthetic side of nature study is one to be emphasized. It is significant of its aesthetic possibilities that the American Park and Outdoor Art Association urged the introduction of nature study into all the schools of the country, and that its successor, the American Civic Association, is doing the same. One of the most important missions of nature study is to bring the country children to see and feel the beauties spread all around them, the beauties which those from the city who are able each summer pay large sums to enjoy. As Prof. L. H. Bailey points out, even many country children too young to feel the appeal of more bushels of potatoes or more pounds of wool have yet thus early formed their dislike for the farm. A flower garden and a pleasant yard would do more to content them with living on a farm than 10 bushels more of wheat to the acre.<sup>c</sup> In the city nature study is the best vehicle for introducing the blessings which nature has supplied to mankind, but which paved streets, tenement houses, and attendant conditions have denied to so many thousands who need them most of all. It is but a short step from teaching the school child to love plants and flowers, to their introduction into the home, and then to window gardening, even though nothing more extensive be possible; and this has transformed such cities as Cleveland and Dayton, Ohio, to mention but two examples.

Many teachers would be glad to take up nature study, were it not for two things: (1) The school curriculum is already crowded, and (2) the teacher feels that the children would prove to know more about nature than he himself does. To consider the second objection first, one of the best arguments for this work is that it furnishes a ground where teacher and pupil can meet as friends, where it does no harm for the teacher to be taught, for once. Many cases might be mentioned where nature study work has transformed the atmosphere of the entire room through a better understanding between teacher and pupils.

<sup>a</sup> Lloyd, F. E., and Bigelow, M. A. *The teaching of biology in the secondary schools*, 1904, p. 41. Hodge, C. F. *Nature study and life*, 1902, pp. 28, 29.

<sup>b</sup> Hall, G. S. *Adolescence*, vol. 2, pp. 144-232.

<sup>c</sup> Bailey, L. H. *Nature study idea*, 1905, pp. 80, 81.

Of course, the class should be kept well in hand, but the teacher should only guide them wisely, tell them very little, and let them discover as much as possible for themselves. A child who has made a discovery on his own initiative, especially if he has been able to convey his discovery to others usually better informed than himself, has taken a step more valuable to him in an educational way than a large amount of formal training would give. It offers him the opportunity for his bit of research work, it gives him an interest which may take him far afield into science.

There is another consideration. One of the most serious criticisms to which our American teachers are liable is that they acquire a teacher's attitude to their pupils out of school and toward the world in general; that they are no longer possessed of the spirit of the learner. Nature study offers teachers a way of escape through allowing them to learn with and from their pupils. Lack of suitable training is a serious handicap, of course; if it be possible, at least a short course should be taken in nature study and school gardening, such as those given at the summer schools held at the University of Tennessee, the North Carolina Agricultural College, and Hampton, or at some good normal school which offers such work. Two or three of the better books on nature study should be thoroughly read, but they should be carefully chosen, and if possible after consultation with some one who is familiar with them, for many of them are more conspicuous for their lack of good points than the opposite. The Nature Study Review gives monthly a bibliography of what has recently appeared. The Hampton nature study leaflets will prove very valuable, especially No. 16, Course in Nature Study for Primary Grades. Prof. H. W. Fairbanks has a valuable article in the Nature Study Review<sup>a</sup> in which nature study work is correlated throughout the entire eight primary grades with geography and history. The four-page pamphlet on Local Nature Observations, published by Dr. A. H. MacKay, superintendent of education for Nova Scotia, might well be copied anywhere, with local corrections.<sup>b</sup>

If the teacher feels the need of a well-outlined course to follow, there are at present few, if any, better than the Outlines of Nature Studies<sup>c</sup> prepared by Professor William Lochhead, now head of the biological department of the Macdonald College at Ste. Anne de Bellevue, Province of Quebec. In the course of study of the Indian

<sup>a</sup> Fairbanks, H. W. The relation of geography to nature study, with a complete outline for a course of eight grades. Nature Study Review, vol. 1, Sept. 1905.

<sup>b</sup> The form employed in Nova Scotia for the record of local nature observations by pupils is printed in the appendix to this work.

<sup>c</sup> Lochhead, Wm. Outlines of nature studies. Ontario Agricultural College, bulletin 142.

schools<sup>a</sup> will be found outlined a seven-years' course which is excellent. In the report<sup>b</sup> of the committee of five of the National Educational Association on industrial education in schools for rural communities, pages 28-44, is a syllabus of a five-years' course in nature study, intended to suggest the kinds of subjects that may be most profitably undertaken. Southern teachers, at least, should procure the North Carolina teachers' bulletins, Nos. 2<sup>c</sup> and 5<sup>d</sup>, the latter of which contains an especially full outline, and bulletin No. 85 of the University of Texas, *The Teaching of Agriculture in the Public Schools*.

The Department of Agriculture, at Washington, has published a number of pamphlets of value, and will send lists of all available publications upon request. If the teacher should meet with technical difficulties, the staffs of the State agricultural colleges and experiment stations are always ready and willing to lend their aid. There is no reason for the teacher's neglecting nature study because he is inexperienced, if only he has the will and persistence. I know personally one or two teachers who started in this work with as little technical equipment as any one could, but who have learned with their pupils, studied what they could obtain in the way of printed matter, and have been conspicuously successful.

As to crowding another subject into the school curriculum, the matter is not so serious as it may seem. Few doubt that our schools teach too many subjects to our children, and spend too long a time on many of them. Certain nature-study enthusiasts believe it is the part of this subject to take such an important place in the course that it will crowd out some of the other work or, rather, give it better under another name. Principal W. A. Baldwin, of the Hyannis (Mass.) Normal School, has made his model course center around nature study and school gardening, and is greatly pleased with the result. In our best city schools geography has been made to take in all the odds and ends of subjects not included elsewhere and to cover perhaps, five hours a week for five years. A change is under way nowadays, however. In Chicago nature study and geography are combined for the first three years; in Boston and New York nature study entirely takes the place of the geography for the same length of time. The University Elementary School of Chicago closely correlates the work in both throughout the course. Almost all the usual subjects of the curriculum can advantageously be correlated with nature study, as is done in the Philippines, without any loss of

<sup>a</sup> Reel, Estelle. *Course of study for Indian schools*. 1901

<sup>b</sup> Industrial education in schools for rural communities. Report committee of five, N. E. A., 1905.

<sup>c</sup> Coon, C. L. *Geography, nature study and agriculture in the elementary schools*, 1905

<sup>d</sup> Stevens, F. L. *A course in nature study for the teacher*, 1905.

time. It is better to give some special time to definite nature-study work, but it need not be great to be of value; it has proved of great benefit when consuming but one hour a week. However, the experience of some of the Canadian schools, as well as of some of those in our larger cities, has shown that the children do better and more work in their other studies if they are freshened a bit daily by some work in nature study and gardening, even though the time left for the regular programme be shortened by an hour a day.

## CHAPTER II.

### SCHOOL GARDENS.

Some few German States gave encouragement to school gardens well toward ninety years ago; but Austria and Sweden first made the movement general, and each officially promulgated its plan in the same year. The Austrian imperial school law of March 14, 1869, prescribed that "where practicable a garden and a place for agricultural experiments shall be established at every rural school." At the present time there are almost 20,000 school gardens in Austria, and in some provinces there is no school without one. In Sweden the Crown announced on October 15, 1869, that at "every school a garden of from 70 to 80 square rods must be laid out." In 1894 there were 4,670 school gardens in Sweden, but since then there has been a falling off of considerably more than a half, attention to them having been drawn away by the wide introduction of manual training.

In Germany the different States carried out their own ideas. In 1814 Schleswig-Holstein placed instruction in the culture of fruits and vegetables in her rural school curriculum, and Nassau did the same three years later. The Prussian village schools began to give elementary agricultural instruction, usually by means of gardens, in 1819, and those of other States adopted the same ideas as the years passed.<sup>a</sup> At the present time the city of Berlin has large grounds for gardening, just outside the city limits, in which every child who applies may have a small garden of his own. Besides, there are sent every day to all elementary schools of the city two wagonloads of leaves, flowers, and plants for use in nature study, drawing, and elementary science from an immense central botanical garden, which is open freely to the public, and there the children may watch expert horticulturists at work. Breslau in 1898 founded a large central botanical school garden, which has since been more than doubled in size. Plants are sent to any school on the order of the teacher. The children do not work in the garden, but are taken in classes to it to see experts work, and are given plants to take home. A smaller plot has now been acquired by the city, where teachers and scholars together

<sup>a</sup> Crosby, D. J. School gardens; their development and function. *Outlook*, vol. 11, pp. 852-861.

may have plots of ground. Since 1888 Leipzig has given to every new school 400 square meters of ground for a botanical garden. Besides this, a centrally located piece of ground of 12,000 square yards has been made a central school garden. Here the children are taught by the chief gardener and his eleven assistants, but they themselves are not allowed to work there; "there are too many of them." There are in the city six or more schools for children of the laboring classes, where there are large gardens for the children, and they are taught agriculture in a very practical way.<sup>a</sup>

Dr. Erasmus Schwab, of Vienna, some thirty years ago was the chief European educator strenuously advocating gardens for every school<sup>b</sup>, and the effect of his pamphlets setting forth the pedagogic importance of gardening for children is reflected to-day in the school gardens of Vienna, which have a wide reputation, and in the spread of the movement from Austria proper into Hungary, where gardening and agriculture have long been obligatory studies in all the elementary, higher elementary, and citizens' schools, to which all children must go from their sixth to their fifteenth year.<sup>c</sup> The writings of Cronberger,<sup>d</sup> Schullerries,<sup>e</sup> and Wilsdorf<sup>f</sup> must figure in any historical study of school gardens, because of the influence they have exerted throughout Germany. Switzerland maintains school gardens in connection with all her normal schools, and each teacher is obliged to receive this special training. Since 1885 the Swiss Government has subsidized gardens in connection with the elementary schools of the Republic, and has offered, to both teachers and children, prizes for essays and plans for them, as have also certain of the larger towns, such as Zurich.<sup>g</sup> Since 1873 Belgium has required every school in the Kingdom to maintain a garden of at least 39½ square rods, to be used in connection with instruction in botany, horticulture, and agriculture. School gardening has given a remarkable impetus to vegetable gardening at large—a matter of great importance to this the most densely populated country of Europe.<sup>h</sup>

In 1880 the French ministry of education decreed that such instruction should be given in the normal schools as would enable their

<sup>a</sup> School gardens in Europe. Special consular reports, vol. 20, pt. 2, 1900, pp. 159–224.

<sup>b</sup> Schwab, Erasmus. *Der Schulgarten*. Wien, 1876.

<sup>c</sup> School gardening. Special reports on educational subjects (England), vol. 8, p. 490.

<sup>d</sup> Cronberger, Bernhard. *Der Schulgarten In- und Auslandes*, 1898.

<sup>e</sup> Schullerries, Josef. *Der Volks-Schulgarten nach Anlage wirthschaftlichen und pädagogischen Ausnutzung*, 1895.

<sup>f</sup> Wilsdorf, Oskar. *Errichtet Schulgarten!* 1894.

<sup>g</sup> Der Schulgarten. *Preisgekrönte Arbeiten*, 1886.

<sup>h</sup> Crosby, D. J. School gardens; their development and function. *Outlook*, vol. 71, pp. 852–861.

graduates to "carry to the elementary schools an exact knowledge of the soil, the means of improving it, the best methods of cultivation, the management of a farm, garden, etc." There are now over 100 normal schools, and good work is being done at last, although the plan existed only on paper for some time after its promulgation. Nominally, since 1887 no plan of a rural school building to which the State was to contribute support has been accepted, unless a garden was attached to the school. As a result, the French Government reports about 30,000 elementary schools with gardens. But Mr. Cloutesley Brereton, after a long and careful investigation among the schools of France, asserts that probably over 45,000 of the French rural schools have gardens attached to them, "but not, as several writers have rashly asserted, with a view to instructing the pupils in agriculture but for the benefit of the teachers."<sup>a</sup> Dr. H. B. Frissell, principal of Hampton Institute, tells me that in an extensive trip over France to study its educational system he found that a large part of the elaborate system of teaching agriculture was not yet in practice. But the people themselves have lately awakened to the economic importance of elementary agriculture for all the children, and the gardens already existing are now being used as demonstration plots by thousands of teachers. M. René Leblanc, to whom is due much of the credit for the revival of interest in agriculture, is now leading an agitation for making an examination in agriculture one of the requirements for the "leaving certificate," and if this were done no elementary school in France would be without a garden.

The movement in Russia began in the seventies, but did not advance very rapidly until encouraged by the Crown in 1887. At that time were begun the free distribution of plants and seeds, the sending out of expert itinerant gardeners to instruct teachers and to organize and direct garden operations, the organizing of certain agricultural courses of study, and the distributing of implements and books on gardening among the more energetic teachers. More recently the Czar has taken a personal interest in this work, and the Government now supplies seeds and seedlings free to normal schools up to a cost of 50 francs.<sup>b</sup> In 1897 there were already some 8,000 school gardens in the Empire, many of which contained colonies of bees, silkworm hatcheries, etc. Since 1891 the Government has supplied, during the spring and summer months, short courses of instruction in school gardening for teachers. In 1902 some 520,000 children had small gardens of their own at the schools. In the remodeled Nikitsk school during the winter three hours a day are allotted to schoolroom study, and from four to five hours to work in

<sup>a</sup> School gardening. Special reports on educational subjects (England), vol. 7, p. 56.

<sup>b</sup> *Ibid.*, p. 163.

the garden, vineyard, etc. In summer, the lessons in class never last more than two hours, while the practical studies occupy from six to eight hours.<sup>a</sup>

Practically all the infant schools of the Netherlands for children under 5 or 6 have gardens in which the children work. Most of the primary schools of the country have gardens, not so much for instruction in practical gardening, as in Belgium, France, and England, as for the purpose of nature study and a means of correlation of the other school studies.<sup>b</sup> Italy is just in the beginning of the school-garden movement. An official of the Norwegian Government writes me that gardens are in successful operation at a number of the people's schools, but that the Government has no information as to their number.

It is rather strange that the British have seen the value of school gardens for certain of their colonies and have lost no time in organizing complete systems of them, but have been so slow to establish them in England. In Jamaica, for instance, there were school gardens here and there prior to the new school code of 1900, but since that time gardens have been established at practically every school on the island. Special grants are given by the board of education for agricultural teaching, and the grants are from three to five times as large as otherwise if in connection with the school there is at least a quarter of an acre under cultivation, with four hours or more of practical instruction thereon each week.<sup>c</sup> This is true to a less extent all over the West Indies, where the British Government is urging elementary agricultural education along the lines laid out by the French for their own rural school system, including a garden at every rural school.<sup>d</sup>

Contrast this with England. "Cottage gardening" was for years the only thing of the kind ever found in a school in England or Wales, and for this a small grant might be earned by the school if it were properly taught. In 1895 only one school obtained this grant; in 1898 only 84. "A large part of Wales is agricultural, and the people gain their livelihood by farming, and yet in 1898 only 31 boys in the whole country had the opportunity to learn anything about gardening." It was not until after this time that the education department recognized that besides the improvement which a thorough knowl-

<sup>a</sup> Knight, G. H. Public school gardens. *Camp and Plant*, vol. 1, p. 29.

<sup>b</sup> School gardening. *Special reports on educational subjects (England)*, vol. 8, pp. 5-8.

<sup>c</sup> Sadler, M. E. The teaching of agriculture in elementary and high schools in the West Indies. *Special reports on educational subjects [England]*, 1901, vol. 4, pp. 594, 595. Wallace, R. H. Agricultural education in the British colonies. *Journal Society of Arts*, vol. 48, p. 666.

<sup>d</sup> School gardens in the West Indies. *West Indian Bulletin*, vol. 3, 1902, pp. 13-15. *School gardens in the West Indies*. *Barbadoes Agricultural News*, January 3, 1903.

edge of gardening may effect in the condition of the working classes, "as a school subject its teaching also serves a general educational purpose."<sup>a</sup> The counties of Surrey and Berkshire first took up the matter of school gardens, as such, in connection with their continuation schools. Prior to the opening in London, in 1902, of the nature study exhibition, these had proved an unqualified success, and many prominent educators of the country pleaded for the encouragement of the movement. At that time there were less than 100 school gardens in Great Britain, and I have been unable to learn of a more recent census of them. But with the new course of study of 1904 for all the English elementary schools, in which nature study is given first place and a special grant for gardening offered to every school,<sup>b</sup> it will not be strange if England soon comes into the front rank in this matter. The report of 1905-6, just published, says that at least 32 counties have gardens connected with day schools, and 22 counties maintain other gardens either connected with evening schools or worked independently by boys and young men.

The educational department of Ceylon provides a plot of ground for every elementary school for the purpose of gardening, and teachers are "urged to pay especial attention" to this feature of the curriculum, in which gardening is made very practical rather than a means of general education. The pupils have a share of what they raise to take home.<sup>c</sup> There are school gardens attached to the three European schools of Natal, and they are compulsory for all the native schools. They are found at practically all the mission schools of the Gold Coast, and are becoming rather common now in most of the British colonies and protectorates in Africa.<sup>d</sup> In Tasmania school gardens are found at some private and some State schools, but the movement is not extensive. Such work is hampered in Australia by the system of payment by results, and while there is a vigorous agitation in its favor in almost every State it will come but slowly so long as the present system exists. Victoria, however, has taken up school gardens in connection with nature study, which is taught in most of the schools, and elementary agriculture, which is taught in all the better rural schools. Each teacher in the State is furnished with a pamphlet, *Gardening for Victorian State Schools*, and considerable space every month in the *Educational Gazette* is devoted to reports from school gardens. For some years the Australian Natives' Association has donated prizes of £1 sterling each for the best-kept

<sup>a</sup> School gardening. Special reports on educational subjects [England], vol. 4, pp. 819-829.

<sup>b</sup> Annual report, 1903-4, Board of Agriculture, London, pp. 104-109.

<sup>c</sup> Wallace, R. H. Agricultural education in the British colonies. Journal Society of Arts, vol. 48, pp. 685, 686.

<sup>d</sup> *Ibid.*, pp. 338, 339.

school garden in each inspectorial district. The minister of education each year grants first and second class certificates to all schools whose gardens are worthy of such recognition. Photographs of these gardens, published in the Educational Gazette, represent them as very creditable indeed. Several horticultural societies of Melbourne and vicinity supply shrubs and flowering plants free of cost for school gardens.<sup>a</sup>

The school-garden movement in Canada is very recent—with the exception of the Province of Nova Scotia one might say it began in the spring of 1904—but already it bids fair to outstrip that of the United States before many years. The priority and supremacy of Nova Scotia is due almost wholly to the influence of Dr. A. H. MacKay, superintendent of education, who has long kept nature study in the van. In 1903 there were 52 school gardens in the Province, 79 in 1904, and 103 in 1905. In the other eastern Provinces the school-garden movement came with the establishment of the Macdonald school gardens, 5 in each Province. Each of these provincial groups of school gardens is under the supervision of a traveling instructor in gardening and nature study, who plans to spend a day each week at each school. Sir William Macdonald's idea included a garden at each school that "should be used as a large slate, for the use of the scholar, where he might see his examples before his eyes, and which might be rubbed clean again as soon at the lesson was learned and another came up." Here the encouragement of the cultivation of the soil as a life work is made ideal, it is true, but the primary aim is "the symmetrical education of the individual." The garden is the means, the pupil is the end. The five eastern Provinces have now incorporated the 25 Macdonald school gardens into their educational systems, others are being established along the same lines, and in more ways than this the movement bids fair to become Dominion wide. Ontario makes an initial grant of \$100, and a later annual grant, to every rural school establishing and maintaining a school garden.<sup>b</sup> In Nova Scotia, "within or near the grounds of rural sections there should be an area for cultivation as a school garden, to serve for the objective study of nature and for practical training in the rudiments of such arts as agriculture, horticulture, or forestry."<sup>c</sup> In New Brunswick grants of \$30 are made annually to elementary schools having school gardens. The Northwest Territories have, of their own initiative, established large school gardens in various larger towns, such as Lacombe and St. Albert.<sup>d</sup>

<sup>a</sup> Educational Gazette, vol. 3-8, 1902-1907.

<sup>b</sup> Regulations, Ontario educational department, Aug., 1904, p. 40.

<sup>c</sup> Nova Scotia manual of school laws, 1901, p. 72.

<sup>d</sup> School gardening. Special reports on educational subjects [England], vol. 4, pp. 457, 458.

The thing which, above all else, assures solidity to this movement in Canada is that it has been recognized that such plans have failed elsewhere because of the lack of suitable teachers; to meet this the training of teachers has been undertaken before there is even a great demand for them. In Nova Scotia the provincial normal school is affiliated with the new agricultural college, and all students are taught how to manage a school garden. There are also several Macdonald school gardens within a short distance of Truro, and these too can be visited. There is also maintained a summer session of five weeks in natural science, nature study, horticulture, and school gardening, attendance on which gives the teacher one or two weeks extra vacation. During the summer of 1905 there were 24 attending this special session. In the new Macdonald Institute at Guelph, Ontario, is to be found the finest equipment in the world for the teaching of nature study, and school gardening receives a very prominent place in every course offered. Sixty experienced rural teachers from other Provinces than Ontario receive free short courses here each year, and these teachers are going back to their schools with new inspiration, to preach the gospel of nature study and school gardens, if their districts are not already provided with such. In Canada this movement is anything but a fad; it is a new movement in education, and is being pushed both by the provincial governments and by individuals privately interested.

In our own insular possessions, there are gardens at each of the 20 agricultural schools in Porto Rico, established in 1901 by Doctor Lindsay, at that time commissioner of education, and there are gardens in connection with a few graded schools, while the present commissioner is endeavoring to have one attached to every rural school of the island. Gardening has been in a course of gradual progress in Hawaii for some years; there are at least 11 school gardens in Honolulu alone, perhaps more, and the Territorial normal school now gives all of its graduates special training in nature study and gardening; so that before long a school without a garden will be a rare thing. The principal of this normal school writes that the greatest obstacle is that the schools of the island have such small amounts of land at their disposal.<sup>a</sup>

Dr. David P. Barrows, general superintendent of education in the Philippine Islands, in the course of instruction for the public schools of the islands, published June 15, 1904, directs all primary schools to establish school gardens within twelve months if possible, and the civil authorities of each barrio have been instructed to fence in strongly suitable ground. Each boy of the third and fourth grades is given a plat of his own, and the products belong to him, abso-

<sup>a</sup> Reports American Park and Outdoor Art Association, vol. 7, pp. 29, 46-48.

lutely. The cultivation of the staple economic plants is taught with special care."<sup>a</sup>

In 1691, George Fox, the old Quaker, willed a tract of land near Philadelphia "for a playground for the children of the town to play on, and for a garden to plant with physical [medicinal] plants, for lads and lassies to know simples and to learn how to make oils and ointments." Two hundred years later, the first school garden in America was established on the grounds of the George Putnam School, of Roxbury, Mass., by Henry Lincoln Clapp, its master. From 1891 to 1900 only wild flowers were cultivated there, but by the latter date Medford, Framingham, Hyannis, and other Massachusetts towns had made such a success of vegetable gardening in connection with school work that the Putnam School put in a kitchen garden with 84 beds. The Framingham, Hyannis, and Boston normal schools by this time were giving good courses in gardening, and at Hyannis, especially, the garden had furnished a large share of the material for other branches of study—writing, composition, arithmetic, book-keeping, banking, etc. In 1901 the Twentieth Century Club of Boston established a garden of 82 beds on Dartmouth street at the English High School; the following year the Massachusetts Civic League maintained 350 small gardens for school children. The young ladies of the Boston Normal School have taught gardening to the pupils of the Rice School in the city.

In 1901 the Hartford School of Horticulture gave a course in gardening to 34 boys from the city schools, who went out to their gardens once a week. Each boy had to care for his own plot well, all through the season, or relinquish all claim to it, in which case it was given to one of the many boys on the waiting list. In 1902 the school provided gardens for 163 pupils, and it has had large classes of school children up to the present time. School gardens have also been maintained in St. Louis, Chicago, Washington, Omaha, Worcester, Cleveland, Brookline, Mass., New York City, Rochester, Yonkers, Philadelphia, Hampton, Va., and many other places. Most of them have proved so successful that they have been made permanent features of the various cities; in some few cases they have been abandoned because they did not have any adequate financial support. Each city that has provided for school gardening has studied its own needs in that direction and has worked out its own salvation. Boston still leads in number of gardens, probably because of the interest taken in the movement by so many different organizations.

As a counterpart to such many-sided encouragement may be mentioned a kindergarten in St. Louis where, in 1898, an old brick-paved yard, 12 by 24 feet, was transformed "by the aid of 80 pairs of little hands into a real live flower garden. The children themselves made

<sup>a</sup> Courses of instruction for the public schools of the Philippine Islands, 1904.

beds, transplanted vines, planted seeds, and cared for the plants." One of the St. Louis papers took up the movement, made a specialty of it, and offered prizes for the best gardens, until it was well under way. The Missouri Botanical Garden later gave to the Civic Improvement League as much of 160 acres as should be needed for this purpose, where each child who applied was given five plots 5 by 10 feet and one plot three times as large for corn, but one kind of vegetable being planted in a plot. In 1903 the Englemann Botanical Club sold seeds to school children at 2 cents a package with very gratifying results, but the work was partially stopped the following spring by four seedsmen, who presented the matter to the school board as an interference with their business. This would seem to be rather a short-sighted policy, for the seedsmen of Rochester and Worcester have been giving free seeds for school gardens and report their sales in those cities in some years doubled thereby, while the Cleveland seedsmen in every way encourage the sale of penny packets of seed by the Home Gardening Association.

In Colorado the movement started in Pueblo in 1902 in connection with three summer kindergartens in three widely separated parts of the city. Owners of property adjoining the schools furnished the land rent free, while the city water company furnished free all the water necessary for irrigation. Half the ground was cultivated in common, the other half was divided among the pupils, so that the work usually was done each morning between 9 and 10.30 o'clock. The gardening proved very successful, and each of the three kindergartens exhibited flowers and vegetables at the Colorado State Fair, "which might well have had space and blue ribbons in the horticultural department."<sup>a</sup>

In 1902 the Chicago committee on vacation schools directed their attention to school gardens, and home gardens as well, distributing over 4,000 packages of flower seeds among the grammar grades early in May. Later in the summer it was found that over 3,000 children had started home gardens either "in back yards, window boxes, or on the roof." In the garden of the Burr School fully 300 children were often at work at the same time, "an object lesson of interest and labor to the neighborhood. In spite of its location the garden was practically unmolested and very little thievery or mischief was done."<sup>b</sup>

This gardening movement was approached from an entirely different side when in the spring of 1897 the National Cash Register Company, of Dayton, Ohio, employed a gardener to lay out 40 plots, 10 by 130 feet each, to be used for gardens by boys of the neighborhood. Why should a corporation do this? Its factory was located in a section popularly called "Slidertown." Building lots sold at from \$200

<sup>a</sup> Knight, G. H. *Public school gardens. Camp and Plant*, vol. 1, No. 2.

<sup>b</sup> Annual reports, committee on vacation schools, 1902.

to \$300 apiece, many of the employees drank hard, and few had homes that attracted them to remain there while not at work. The president of the company decided that he owed his success to those habits of industry which he had acquired as a boy on the farm. With him the opening of the gardens and the expenditure for land, gardener, tools, seeds, etc., were purely a business investment of dollars and cents. And it has paid. The company has more than doubled the land used for this purpose; it still pays all the expenses of the gardens, including seeds, and gives prizes worth \$50 each year for the best gardens. Conditions in the neighborhood have become so desirable that lots are now worth from \$900 to \$1,500 apiece, the vicinity is known as South Park instead of Slidertown, there is hardly an unoccupied house there, many of the factory people own their homes, and houses for rent are almost never vacant. The president of the company lays to the gardening and to little else the change in the character of the people, both adults and children, and in the entire spirit of that section of the city. More than that, it has shown that the very boys who worked in these gardens developed in their schools much more rapidly than those who did not. It has paid so well that in the spring of 1905 the company organized a neighborhood garden club for the children of South Park, who applied for gardens in such large numbers that only a fraction could be accommodated. The expert gardener in charge of the regular gardens became the director of the new venture, and, for the nominal fee of 10 cents, seeds, plants, and instruction were furnished to the children for home gardens during the summer.

The Home Gardening Association of Cleveland, Ohio, has made a success of its movement to beautify the city, much, though by no means all, of its work being done through the medium of the schools, and with the hearty cooperation of school officials and teachers. Each spring lessons are given in the schools on the ways to plant and care for gardens. Each school building holds an exhibit in the autumn, and prizes of money or bulbs are awarded to the best exhibits. In one case, every child from the entire school had an exhibit. Usually the majority of children in each school are exhibitors. In 1904 the board of education took up the matter officially, employed an expert nature-study lecturer, and established four large school gardens where the children should own the plots of ground and all the things which they should raise on them. During 1903 over 132,000 packets of seed were distributed to school children. "The results substantiate the wisdom of the oft-expressed idea that to gain immediate results in the improvement of home surroundings the effort must be made through the medium of the public school children."<sup>a</sup>

<sup>a</sup>Annual reports, Home Gardening Association, Cleveland, Ohio, 1903-1906.

The Woman's Institute of Yonkers, N. Y., in 1903 started two small gardens in the tenement district, in which 36 boys did so well that the institute decided to make gardening more extensive, "in the hope that eventually its benefit both as an educational and social factor might be so demonstrated as to induce the board of education to incorporate such instruction into the work of the public schools." In 1904 a "garden school" was opened on some 2 acres of land divided into 240 plots, the size of which varied slightly with the age of the boys who were to work them. Each boy paid a fee of 2 cents a week "to instill a feeling of proprietorship," but if he were unable to pay this he could give an equivalent in produce when he had raised it. Each boy was required to be at his garden at least twice a week. Usually he was there almost every day. The estimated market value of the produce raised, which of course belonged entirely to the boys, was about \$1,200. The number of plots in 1905 was increased to 250, and there were twice as many applicants as plots. Had girls been admitted probably 1,000 children would have been kept busy. Besides this garden school, the Institute Civic League provided three small gardens on school grounds, one of them for girls only.<sup>a</sup>

Because of the publicity it has attained, the children's school farm in the De Witt Clinton Park, of New York City, has had perhaps a wider influence than any other similar undertaking in America, unless it be the Whittier garden at Hampton, Va.; for, as a direct result of the former, the Philadelphia board of education appropriated \$3,500 for two large school gardens; the board of education of East Orange, N. J., started one garden, and gardens were maintained by the Teachers College of Columbia University and the New Paltz, N. Y., Normal School. The school farm in question owed its origin to Mrs. Henry Parsons, who, during 1902 and 1903, maintained a garden of 150 plots on 7 acres of what was to be a part of New York's park system. This tract is situated in the heart of the tenement district, where the rougher element considered that they owned everything in sight and thought nothing of a term in prison. The land had been used as a dumping ground for years, and the park department had no plow strong enough to break the ground, so a street-breaking plow was resorted to, unearthing nothing but lime, rags, wire, bottles, tin cans, and stone. A second treatment unearthed little else than a second layer, and so the first year only an area of 84 by 114 feet was prepared, and this was not planted until July 29. The first tools the little urchins had were clam shells. There was only one teacher. And yet the "school farm" was a success in every way. The neighborhood adopted it and made it its own, and the next year more ground was

<sup>a</sup> School gardens. Department of Agriculture, Office of Experiment Stations, bulletin 160, 1905

cleared up, so that 277 children had gardens of their own, raising over 30,000 radishes, 1,745 beets, 350 quarts of beans, 3,000 heads of lettuce, etc. In 1904 the work was carried on as well as possible while the contractors proceeded with the construction and permanent improvement of the park. The park board has kept the school-farm feature, and it has been made a part of the New York park system.

In the heart of the New York ghetto the teachers of a school on Rivington street have conducted a garden on a lot 40 by 70 feet. Two thirds of the 2,400 children attending the school had never before seen a plant growing save in a flowerpot. Only early vegetables were raised, for after the close of the school for the summer the lot was turned into a playground. Here the children could not be kept away from their garden. They were there early in the morning and late in the afternoon, and woe came to any little weed that dared to show its head among the vegetables.<sup>a</sup>

Philadelphia<sup>b</sup> has seven school gardens—two supported directly by the board of education (the first instance of this in any of our cities), one by the Civic Betterment Association of Germantown, two by the Civic Club, and two by the Vacant Lot Cultivation Association. The two gardens first mentioned accommodate over 500 children; the others are somewhat smaller. One of these larger gardens was located in Weccacoe square, in the heart of the foreign tenement portion of the city, where criminality was common. Two plowings brought to light as many layers of broken bricks, and the soil underneath was hard clay. Some applicants for plots waited in vain all summer. The average yield from the plots of the school board, 8 by 16 feet, was 496 radishes, 21 beets, 2½ pecks of beans, 15 heads of lettuce, 22 turnips, 202 tomatoes, and 1 quart of lima beans. One hoe was stolen, the only loss during the entire season. There were hundreds of applicants for plots for the next year. Gambling and rioting have disappeared from the neighborhood, there have been fewer arrests than before, and the college settlement, a block away, reported that "never had there been a summer so peaceful."

It was seen in Washington, D. C., that progress in other places was slow, from the fact that the public school-teachers had had no training in either horticulture or agriculture. To meet this condition, the United States Department of Agriculture cooperated with the two normal schools for white and for colored students in the city, Government experts lectured to the students, and opportunities for practical work were given them on the grounds and in the greenhouses of the Department. Normal School No. 1 has carried this

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<sup>a</sup> Parsons, Mrs. Henry. Report, First school farm of New York city, 1903-4. School gardens. Department of Agriculture, Office of Experiment Stations, bulletin 160, 1905.

<sup>b</sup> Keen, Dora. Philadelphia school gardens, 1905.

work on for four or five years now; No. 2 (colored) began in 1904. In 1905 the board of education asked Congress for a new normal school building with grounds ample "for carrying on work in school gardening." At one city school where there is but little land each pupil is allowed to plant one seed and to care for and own the resulting plant. Even that has been enjoyed by the children. Home gardening was encouraged last year by the schools, 66,000 penny packages of seeds having been sold to the pupils, not more than three packages to any pupil. Teachers gave lessons in the school rooms on the manner of planting and the care of the garden in summer. In 1905 the superintendent of schools officially took up the matter, asking every school to plan work for the year, and wherever there was sufficient ground each grade in a building would be assigned a portion. In 1904 every colored school in the District of Columbia had a garden, with the exception of one school with no grounds whatever connected with it.\*

Owing to the impetus given by the lectures on nature study by Dr. C. F. Hodge, of Clark University, a number of residents and teachers of Worcester, Mass., were led to assist in establishing gardens in connection with several of the city schools. These have been a success in every particular, save the essential one of rousing the school authorities to a sense of their importance; for the only official cognizance taken of the movement so far is an appropriation of \$25 for hauling to school buildings soil which the teachers themselves might beg or buy. Miss Mary C. Henry, principal of the Upsala Street School, has made an oasis of her school yard, and here was demonstrated the practicability of the work outlined in Doctor Hodge's *Nature Study and Life*. Mr. Walter D. Ross, a seedsman, in 1903 and 1904, gave seeds and fertilizers free to those schools desiring them; 27 schools accepted this offer during the summer of 1904. The Worcester County Agricultural Society offered a considerable list of prizes for the best collection of garden products from the pupils of any one town, from any one school, from any one schoolroom, and from any school child. Fourteen of these premiums were taken by children from the Downing Street School, namely, that for the best school collection, and six first, four second, and three third prizes to individual children. These exhibits were all the products of home gardens; most of these belonged to children in homes where there had never before been gardens, and the entire work of the Downing street children was supervised by Miss Edna R. Thayer, who had previously never made a vegetable garden. Over 400 children from this school worked in their gardens all summer, each one being visited at times by Miss Thayer, who herself made a garden at her home and, with the children, took care of four large beds of plants and vegetables in the

\* School gardens. Department of Agriculture, Office of Experiment Stations, bulletin 160, 1905.

school yard. Last summer Miss Thayer was not able to give her time to the work again, and no one else was willing to undertake it, yet it was learned during the summer that over 200 of the children, who had been aided by Miss Thayer the year before, had, of their own initiative, bought seeds and fertilizers, prepared their own ground, and were taking care of their home gardens just the same.

The encouragement given in Worcester by one seedsman is more than duplicated in Rochester, N. Y., where the seedsmen, nurserymen, and florists are the leaders, perhaps, in encouraging the school children to beautify the school grounds with flower gardens, trees, and shrubbery. The board of education is generous in providing land, the daily papers keep the movement before the public, and the Woman's Industrial and Educational Union distributes penny packages of seeds provided by the city seedsmen for this purpose. The children have not had such great obstacles to overcome as in other cities, but their enthusiasm has, as it were, sought for difficulties which they might surmount. For example, the children of school No. 26 one afternoon carried sod for half a mile of parking along the sidewalks near their school, in 70 small push carts, each of which made the round trip of half a mile and back ten times. On another day they set out 70 elms and 60 poplars along the street, and all summer they cared for a flower garden the entire length of these strips of turf on either side of the street.

The school garden in all America that is sending its influence over the widest sphere is that of the Whittier School, of Hampton Institute. This school is at once the practice school of the normal department of the institute and the local school which the 400 colored children of the neighborhood attend. Two hundred plots of ground are each given to two children to be planted and cultivated by them, the crops belonging to them equally. This gives them both a sense of ownership and of cooperation—things of especial importance to the negro. The size of the plots varies with the size of the children. About three-fourths of the children have come to cultivate their plots through the summer. In this garden not only does every child attending the school learn practical gardening, but every young woman who goes out from Hampton to teach her people in the South how to live better than before has both learned and taught gardening under expert supervision. The results are all that could be wished. When the gardening began in 1900, compulsion was necessary with the older girls, who not unnaturally thought it a disgrace to "work in the fields." Within two years no other part of the curriculum was approached with such eagerness, the average attendance was greatly improved, and the scholars were more constantly under the teachers' influence. President Frissell tells the writer that he believes

this to be the most important work of the institution and that school gardens managed by Hampton graduates are springing up through the South with the best of results.

The importance of school gardens is indicated by the impetus given them from so many sides, by the fact that they are not in any way the fad of some one class of people, but that they are used—and successfully used—by organizations with widely different purposes to further their own aims and to solve the problems of special interest to them. France originally established school gardens to provide a convenient means of supplementing the teacher's income, thereby simplifying the problem of maintaining the public schools. It was largely the same in Germany at the beginning of the movement, though now the gardens are used mainly to furnish material for the practical study of botany, while in Prussia there is the practical end of promoting the cultivation of fruit trees. In Sweden school gardens were provided for the express purpose of promoting agriculture. In France and Belgium they have been made to serve in educating the people to the better cultivation of fruit, vegetables, and flowers.<sup>a</sup> In Austria, as in Canada, general education is made paramount, the development of the child in heart, head, and hand proceeds simultaneously, while practical gardening is only of secondary importance. The movement began in England in a severely practical way, as is necessary where the evils of payment by results obtain, but this is changed by the new code into a means for the study of nature and of natural objects and for the correlation of the various studies of the elementary school.

All of these countries have made school gardens more or less an integral part of their educational systems, but how different is the case in the United States. The board of education of Philadelphia, it is true, entirely supports school gardens for its children; East Orange, N. J., Rochester, N. Y., and Cleveland, Ohio, have made their gardens a part of their school systems. Cleveland, Ohio, during 1905 supported 8 gardens,<sup>b</sup> and employed an expert, Miss Louise Klein Miller, as curator of school gardens,<sup>c</sup> and plans are now in course of preparation for a considerable extension of the gardens in size and number. There are also school gardens at present in probably half a hundred cities, and in a large number of country districts of the Middle West, notably in Illinois, Iowa, Minnesota, and Wisconsin, where individual teachers or country superintendents of schools have aroused some local interest. The United States Department of Agriculture estimates that there were about 75,000 school

<sup>a</sup> Cowley, R. H. The Macdonald school gardens. *Queen's Quarterly*, 1905, p. 399.

<sup>b</sup> Miller Louise K. Children's gardens, 1904.

<sup>c</sup> Annual reports, Home Gardening Association, Cleveland, Ohio, 1903-1908.

gardens maintained during 1906. Illinois led in number of gardens, and New York, Pennsylvania, and Massachusetts followed in the order named.

Moreover, each year sees a longer list of normal schools giving courses in school gardening under the supervision of experts. In addition to those already mentioned, Tuskegee gives good courses in this branch to any of her students who care for it; the three State normal schools of Missouri teach gardening, as do the normal schools of Willimantic, Conn., Johnson, Vt., Los Angeles, Cal., and Salt Lake City, Utah. Over a dozen of the State agricultural colleges are either offering or preparing to offer courses in school gardening. But despite all this, the movement as a whole is fostered not so much by educational authorities as by other organizations and by individuals. Most of the money for the work in New York is given by the park board and by interested individuals. In many places the work is done directly by some few interested citizens; often a city civic club fathers the movement, as in Bradford, Pa.; one of the best and most widely known gardens, as already related, is supported entirely by an Ohio corporation. In two cities newspapers have started and taken care of the movement until enough public interest could be aroused to assure it of success under other auspices. In Rochester, N. Y., the seedsmen have been its principal supporters, while in St. Louis they have been hostile to it. College settlements in all the cities have lent their aid, and everywhere local agricultural and horticultural societies have given at least moral support. The committee of five of the National Educational Council has attested to the value of a garden with every school. The American Civic Association has organized a department of children's gardens, which is spreading abroad information concerning school gardens, conducting an active propaganda for the further extension of the movement, and helping communities to secure proper teachers of gardening.

I believe school gardens in America have come to stay, but just what kind of plan they will finally conform to is far to seek, if indeed they ever become systematized, as is inevitably the case in countries where reforms work from the government down. Certainly, as a national movement, they will not come to be utilized merely for the teaching of gardening, in any of its forms, as a trade, as is done on the continent of Europe, nor is it likely that they will very closely approximate the "Macdonald slates," from which the lessons "are wiped off as soon as they have served their educational purpose." For they have not fully served their purpose until their products have been harvested by the little landowners, who have been thus allowed to taste the sweet fruits of their labor. The educational value of school gardens is by no means limited to the formal studies of the school curriculum; the ethical value to the child is perhaps their

greatest good. True, if they are to be really school gardens, the garden instruction must be put on a pedagogical basis, and this has already been done in more than isolated examples. For instance, Principal W. A. Baldwin, of the Hyannis, Mass., State Normal School, exhibited at the St. Louis Exposition charts and diagrams of a correlated system of instruction in all the studies of the ordinary curriculum, based upon the school garden. This is the result of the work of years, and has proved successful in practical use in his school. It has been published in several places,<sup>a</sup> and a number of systems are now based on it. The American Civic Association publishes a 15-page pamphlet by Mr. Baldwin on School Gardens and their Relation to Other School Work,<sup>b</sup> which shows concisely and with many illustrations just how gardening is used in three grades of the elementary school as the correlating factor of the course, not as a new and separate subject. The teachers of the Whittier School at Hampton have worked out plans whereby they each day use the work just done in the garden as the basis for the instruction for that particular day, and in few schools can you see such interest in every study, or such a record of daily attendance. If so many of our teachers did not feel incompetent the minute they left their text-books, the above-mentioned method, it seems to me, would furnish the ideal elementary education. It would supply the "Sachunterricht" which Lay<sup>c</sup> and other German reformers are to-day so insistently demanding for the German schools. Perhaps the school garden may aid directly in bringing our American teachers to work always for the natural and harmonious development of the child, rather than to teach him a number of separate subjects as such. If it shall do this, it will mark a notable step in our educational progress.

Have school gardens as yet in this country proved of practical value in strictly school work? Those best acquainted with them are confident that concrete instances may be given. In the first place, in practically every school heard from directly they have given an interest to some scholars, probably to those of a predominantly motor type, to whom in the past the lessons in the books had meant little. A wholesome interest once aroused, the school work was more easily done. Were there no other advantage in this subject, it would be justified by this result in a country where we have few special schools for those a little slow or backward in their studies. But this is not all. Prof. H. D. Hemenway, of Hartford, Conn., says: "It has been found that school gardening tends to inspire one to do better work in other

<sup>a</sup> School gardens. Department of Agriculture, Office of Experiment Stations, bulletin 140, 1905, pp. 26-31.

<sup>b</sup> Baldwin, W. A. School gardens and their relation to other school work. American Civic Federation, 1905.

<sup>c</sup> Lay, W. A. Methodik des naturgeschichtlichen Unterrichts, 1893.

branches. In Dayton, Ohio, where school gardens have been conducted for six or seven years, boys taking gardening make 30 per cent more rapid progress in their studies than those without gardens."<sup>a</sup> The increased efficiency in other school work has been noted in Philadelphia, Cleveland, Hampton, and the Rice School in Boston. In the announcement of the department of children's gardens of the American Civic Association is the statement by Mr. Dick J. Crosby, of the Office of Experiment Stations, of Washington, that "experience has shown that devoting four or five hours a week, or even two hours a day, to nature study and gardening, if properly conducted, enables the pupils to accomplish more in the remaining time than they formerly accomplished in the whole time spent in school."

I have remarked that the educational value of school gardens was not at all limited to the school curriculum. President Eliot, of Harvard, says: "A leading object in education for efficiency is the cultivation of the critical discernment of beauty and excellence in things, and words, and thoughts, in nature, and in human nature," and he believes that this may come in a large measure from nature study and school gardens. Sharing this view, the American Civic Association decided to further school gardens as much as possible, because of "the firm conviction that there is no more potent influence for better civic conditions in America than the educated youth, in whom there is developed this critical discernment of beauty and excellence in nature and art, an abiding love for these things, and a feeling of personal responsibility for better civic conditions. Furthermore, its members are firmly convinced that there is no more efficient agency for the attainment of those high ideals in education than school-garden work, properly correlated with other school work."

Is this belief visionary? Quite the contrary has been proved. Prof. J. E. Davis, of Hampton, says: "Since the introduction of school gardens the children have more respect for the trees and shrubs of the school yard, and show a sense of responsibility for the neatness of the grounds, picking up paper and other litter without being told."<sup>b</sup> Director Martin, of the Philadelphia bureau of health, writes: "In the slums of Philadelphia I have found that in the houses where there are flowers—a result of our school gardens—there is neat cleanliness, although all around is squalor."<sup>c</sup> School gardens in the slums of a number of cities have taught more civic righteousness than all the police courts or college settlements have been able to do. In Philadelphia the residents of Weccacoe Square themselves hooted at the idea of property rights being respected, yet only one hoe was stolen.

<sup>a</sup> Hemenway, H. D. Importance of rural school gardens. Southern Workman, vol. 32, p. 527.

<sup>b</sup> Davis J. E. The Whittier school garden. Southern Workman, vol. 31, p. 603.

<sup>c</sup> Keen, Dora. Philadelphia school gardens, 1905.

There was no other loss during the season, and the police records show that crime diminished materially in the neighborhood. "The children of the vicinity were taken off the streets, even the big boys, at that formative period of 12 to 16, when so many begin to go to the bad." The children began to ask for books on gardening; this led to the formation of quite a little circulating library by the teachers, and not a book or magazine disappeared.

The country over, a more trying place could hardly be selected for a garden than De Witt Clinton Park, in New York City; but not a thing was stolen. Respect for ownership spread from the garden to the neighborhood, children who had already become criminals in a small way were completely changed, the city was shown "how willing and anxious these children were to work, and they were taught private care of public property, economy, honesty, application, concentration, self-government, civic pride, justice, the dignity of labor, and love for the beauties of nature, which they had never before had the opportunity to see." The lady living next the yard of the Downing Street School, in Worcester, Mass., had never seen the pears ripen on her trees until the summer when 400 of the school children planted and cared for gardens of their own; that fall she sent the children a large bag of pears as an evidence of her gratefulness to them for not touching a pear all summer long, so far as she knew. "Best of all the results of the gardens of our Cleveland school children, some few of the most troublesome boys have found their natural line of interest, and seem to be quite reformed." Such instances might be largely multiplied. Professor James says: "Manual training is the most colossal improvement that ever came into the schools of America, because the boys learn to work together, to look at each other's work, and to help each other work, and become cooperative instead of selfish little imps who are trying to get ahead of their fellows and crow over it."<sup>a</sup> School gardens possess all these advantages of manual training, with the added ones, over some forms of this discipline, of their feasibility almost anywhere, of easier inculcation of the sense of ownership, of working with the fundamental instead of the more accessory muscles, and of being essentially out-of-door work.

This matter of health is of no small import, especially to those children of the cities who otherwise would not work in the open air and in the fresh soil. The district nurses of New York report cases of little children with a pronounced tendency to tuberculosis in the spring, who, after a summer spent in gardening, "became quite well and strong by autumn." The children are not only taken off the streets during the vacation period but are given a pleasurable occupation, one disposing them favorably toward work, and especially toward the fundamental industry upon which our life depends, the

<sup>a</sup> Report, 1904, Ontario Dairymen's Association, p. 35.

enlarged practice of which would tend to counteract the congestion of our cities. It is on this last account that the movement is being aided by the New York Male Teachers' Association. In this connection it should be noted that gardening has proved to be of such importance in the development and training of the feeble-minded and the defective that it is rapidly spreading through all the better institutions for these unfortunates in the country.

Of course it is not to be denied that in some places there has been a lack of success in carrying out the school garden idea. Usually this has been for reasons which can be clearly pointed out. Perhaps the greatest may be likened to that of the man who started to build a house without considering the cost thereof. It is very easy for the novice to underestimate the attention and labor which the garden must receive. "There can be no more serious mistake than to suppose it is only necessary to plant the seeds and let them grow."<sup>a</sup> Cases are numerous where a teacher has attempted single-handed to carry on extensive gardening without any previous experience in such work and has been successful; witness the instance of Miss Thayer in Worcester, who made a success in every way of 400 children's gardens, though she had never before raised vegetables herself. But her whole plan was carefully mapped out beforehand, and one without her initiative and tenacity would have failed. This lack of preparation on the part of the teacher is amply met in Canada by the training given in Macdonald Institute; in the United States it is partially provided for in the normal schools mentioned above. It may be met by the teacher who has no special training by reading a few of the better books on gardening, studying some of the better seed catalogues, and, when the time for practical work comes, by being satisfied with a small beginning. There is plenty of time to enlarge; if the garden is at first limited to one class or grade, a spontaneous interest in the work is usually awakened in other grades, and they will either plan and manage a garden of their own, or find some one who will oversee it for them.

When the gardening has been efficient, and yet has not been kept up, the cause is usually that the people in general and the board of education in particular have not been convinced of the value of it, and this is all the more serious since values vary so with the community or people in question. Canada has become convinced that the garden is of great educational value, and is prosecuting the work with eagerness. In the Middle West, the people are more inclined to ignore the garden as a means for the bettering of the immediate teaching, and look at it from a utilitarian point of view; they want to see

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<sup>a</sup> Jackman, W. S. School gardens. The Elementary School-Teacher and Course of Study, vol. 2, p. 574.

financial results. Superintendent Kern, of Winnebago County, Ill., has made a success of about 25 gardens at rural schools,<sup>a</sup> one of them where there were only seven pupils; Miss Laura Fitch, of Lucas County, Iowa, found this almost impracticable, but got scores upon scores of her country school children to make gardens at home, in connection with their school work, and on through the long summer vacation. In the fall a three days' school fair is held at Chariton, the county seat, where the children exhibit their products and receive small prizes for the best exhibits. Two of the faculty of Iowa State College are present, do the judging, and make addresses to the children. The movement in this shape is well supported by the people, because they can see the direct good to come from it; their children are made better farmers and better housekeepers. Perhaps it is in this way that gardening must get into the western schools. Already the farmers' institutes of several States have officially indorsed the movement, and the agricultural colleges of Ohio, Indiana, Illinois, Wisconsin, Iowa, and Minnesota, among other States, are giving what aid they can. The movement is spreading with an ever-growing impetus, for the very reason that the farmers are seeing their children taught that mind can do a great deal toward growing more bushels of corn to the acre, and a better variety of sugar beets. Put into practice with this end in view, its value as an educational tool will come, and it will have a doubly firm hold.

The two things, then, that school gardens need to make them adopted in our entire American educational system, are (1) a true appreciation of their value, both to the child and to the people; and (2) a body of suitably trained teachers, so that no disastrous miscarriage may occur in the beginning.

In planning the first school garden some such book as Hemenway's *How to Make a School Garden* is useful, though a cut-and-dried plan is not best for any school. Aside from a short course at Macdonald Institute, Guelph, Ontario, a visit to the Whittier garden at Hampton, Va., would be the best thing advisable. In the yearly reports of the committee on school gardens of the Massachusetts Horticultural Society are published the names and addresses of those especially interested in the movement, any of whom are glad to give advice. The outline plan of the school garden and grounds of the Bowesville Consolidated School, of Bowesville, Ontario, will be found in Cowley's article on the Macdonald school gardens;<sup>b</sup> one of the Oakdale School, of Dedham, Mass., is given in Mr. Hemenway's book. The former is a good example of what may be done with new school grounds just as easily as to lay them out without the beauty of curved walks, masses of shade, open vistas, individual

<sup>a</sup> Kern, O. J. Reports, Winnebago (Ill.) County schools, 1903-1906.

<sup>b</sup> Cowley, R. H. The Macdonald school gardens. *Queen's Quarterly*, 1905, p. 419.

garden plots, and an experimental garden for the use of the school as a whole. Each year sees a growth in the number of consolidated schools in the United States; it is time for a plea that none should be established without suitable garden space attached, as is obligatory in France and Russia. In Dr. Helen C. Putnam's pamphlet on School Gardens in Cities<sup>a</sup> are given plans of the gardens of the Russian primary schools and of the gardens at Possner, Thuringia, from Doctor Lukens's article on it.<sup>b</sup> The Hampton Nature Study Leaflet No. 15 is very good and practical, the best thing obtainable for southern schools. In any case it is better to have a small number of plots of ground and to have them large enough to hold the interest of the pupil than to give beds to a larger number of children at the risk of a loss of interest through too little variety and the impossibility of producing results large enough to offer some inducement to the individual pupil.

The length of time necessary to be spent on the garden can not be determined accurately in advance. In the largest school gardens of Nova Scotia—2 to 3 acres—two hours per week by all the pupils was found requisite to keep the garden in proper condition. In other places more time has been necessary. Sometimes the work is done during school hours; often, as in Cleveland, the enthusiasm has been so great that the children have enjoyed doing their work after school or Saturdays. In some cities the work is done during the regular nature study period. This is a matter lending itself to adjustment so readily that local conditions can easily settle it.

In planning a garden it will be well to keep Professor Jackman's hints in mind: "(1) Select plants which do not present a wide diversity of habit unless the garden will lend itself to a variety of conditions of water, sunshine, and soil; (2) avoid so-called novelties in plants; (3) allow plenty of time for systematic care; odds and ends of time will not do—the weeds do not grow by fits and starts."<sup>c</sup> The necessary seeds are the easiest to provide. They can be bought of the Home Gardening Association, Cleveland, Ohio, for 1 cent a packet; they may also be obtained gratis through Members of Congress, or the Secretary of Agriculture will send packages of seeds to any teacher who will apply. During 1906 the Department of Agriculture distributed 377,540 packets of seed for school gardens.

Are there too many obstacles in the way of establishing and maintaining a garden in connection with the average school, urban or rural, to prevent its being a success? I believe not. I do not know

<sup>a</sup> Putnam, H. C. School gardens in cities. Rhode Island school reports, 1901.

<sup>b</sup> Lukens, H. T. A school garden in Thuringia. Educational Review, vol. 17, pp. 237-241.

<sup>c</sup> Jackman, W. S. School gardens. The Elementary School-Teacher and Course of Study, vol. 2, p. 575.

in what other undertaking there are so many demonstrations that where there is a will there is a way. The work of Mrs. Henry Parsons in New York and of Miss Thayer in Worcester show what may be accomplished by the enthusiasm of one person—in the latter case without any financial backing whatever. At Hampton a success has been attained despite the innate prejudices of the people of the neighborhood. There is no record of a failure in any city slums except for want of funds, although, so far as I know, every neighborhood has been, if not hostile at the first, at least incredulous of the possibility of success. It would perhaps be hard to name a difficulty which has not been overcome or circumvented in some way by the enthusiasm of the children and the careful planning of a competent teacher.

Nor is this educational agency confined to city schools. In Europe the school garden is held to be especially an adjunct of the rural school; in Canada the consolidated rural schools have the best gardens. True, there can not be a very elaborate garden at a school of only ten or a dozen children; school gardens having a *raison d'être* of their own demand better schools. But in Nova Scotia, a Province of rural schools, there were last year 98 school gardens besides those of the consolidated schools. In our own Middle West school gardens flourish best in connection with the consolidated schools, but Superintendent Kern and others have taught the teachers under them to make the most possible of gardens in very small rural schools, with no aid except that so readily given by the children. It is strange that other countries think gardens especially fitted for rural schools, while we think them better for city schools. Probably it is because we are apt to fold our hands complacently and say that the children of our rural communities learn practical agriculture at home. Well and good, but do they learn the best? Would not the school garden in the country teach even more than the children pick up from what they see done at home? The farmers of Illinois have made their land worth over \$100 an acre to them; one can not live among them without knowing that they are good farmers. But there are plenty of instances among the best farming communities of the State where a boy has learned at school to mix his agriculture with brains, and where his school experiments have taught him to raise more bushels of corn to the acre than his father had ever done, and better corn at that, ear for ear. How many a farmer boy, who will practice farming all his life, goes through his life in the school and at home without knowing how the roots of corn spread out, or how to cultivate the corn properly to insure the largest yield, except as he follows what he sees others do and without knowing a hundred things of the kind which science is waiting for him to learn and utilize? How many country boys have been given any-

thing to think of as they hoe potatoes except that their city cousins are not blistering their hands so?

Of what value are school gardens? What can they be depended upon to do? Certainly, what they have done, at least. They have given whole schools a new incentive, and have raised the daily attendance materially; they have proved an open sesame into both the problems and interests of life, to children always before considered dull; in cities where some children had school gardens and some had not, the former are reported to have made much greater development in a given time than the latter; after certain schools had allowed their children to devote as much as two hours a day to their gardens, the pupils accomplished more with their regular studies during the rest of the day than they had done before in all the time. Country children have become interested in the science of their future life occupation, and so have been taught to think for themselves and to respect their calling. Children have been taught through these gardens more about practical ethics than by any other means yet devised, besides learning something of the fundamental occupation of mankind—tilling the earth. The sociological studies of Flynt, Wyckoff, and others, show us how many boys produced by our American school system are at some time obliged to say, with the unjust steward: "I can not dig; to beg I am ashamed." There are but two results possible from such a premise: Crime, or begging in spite of shame. Prof. C. F. Hodge has painted in vivid colors the moral turpitude involved in not giving to every child a feeling of independence in any strait, through the knowledge that no matter what comes, he can gain an honest livelihood from the soil. Last, but not least, school gardens have assisted nature to throw off the tightening clutches of tuberculosis.

## CHAPTER III.

### ELEMENTARY AGRICULTURAL EDUCATION.

Since the system of agricultural education of France is better known than that of any other country, it will be well to begin there in the consideration of primary agricultural education. As far back as 1850 agriculture was made an optional study in the primary schools.<sup>a</sup> In 1879 it was provided that agriculture should be taught in every normal training school, and three years thereafter should be obligatory in all the primary schools. But it was not until 1896-97, when a circular was issued making the course very practical and well defined that much real progress was made. At the present time agriculture is taught in every rural primary school in France<sup>b</sup> beginning with "object lessons" for children between 7 and 9. From 9 to 11 four half-yearly courses are given, in the first of which the three states of matter are considered, animals are studied and compared with each other, and there is a short description of the human body. During the second half year plants in all stages of growth are studied, objectively as much as possible, and then some "first ideas of agriculture." In the second year are included elementary ideas of science as related to agriculture, including personal investigations of different kinds of soil, largely made during school walks. In the higher section of the elementary primary course, from 11 to 13, the middle course is extended and made more detailed. The hygiene of man and animals is taught, also vegetable physiology and the chemistry of plants. The more important technical terms of agriculture are explained and used, and much is made of the experimental plot, of cultivation, pruning, and grafting; "the work must be rational, requiring the exercise of the intellectual faculties as well as labor with the hands."

The girls in all the rural primary schools are taught "physics and natural science as applied to agriculture, horticulture, domestic economy, and hygiene." In some Departments the girls follow the same course as do the boys; in practically all Departments they

<sup>a</sup> Brereton, Cloudesley. *The rural schools of northwest France*. Special reports on educational subjects [England], vol. 7, 1902

<sup>b</sup> Medd J C. *Rural education in France*. Special reports on educational subjects [England], vol. 7, 1902, pp. 268-277.

are taught "certain notions connected with milk, butter making, poultry, and gardening," for the French peasants look upon gardening as woman's work, and help only when they have nothing else to do. Almost every rural school has a garden attached, where intensive work is made the essential thing. A large number of the primary schools use the text of M. Barillot,<sup>a</sup> the best elementary text I have seen in any language, but often one finds that a departmental professor of agriculture has written a text dealing with things of special importance to that locality, and that the schools in his Department are using this special text-book.

In the higher primary schools a theoretical course in agriculture is given in each of the three years of the general section, one hour a week; while in the agricultural section, which may exist in any school in which there is a demand for it, there is agricultural instruction three hours a week and six hours of practical work, except on rainy days, when there is experimental work indoors and the studying of farm machinery. This latter section is found in but few of the higher primary schools, because, as M. René Leblanc says, "on the one side the teachers assert that there are not enough pupils to form a section, and, on the other, the agriculturists do not send their children because that section is not organized." The Government now urges the inclusion of such a section in all these schools, saying, and truly, that the école pratique does not take its place. M. Leblanc<sup>b</sup> is leading an agitation for the inclusion of an examination in elementary agriculture as one of the requirements for the leaving certificate, which, once done, would make this subject as efficiently taught as any, since the leaving certificate is the one thing for which every French boy strives.

There are in France two classes of strictly agricultural primary schools, viz, farm schools and practical schools, the former, however, now being rapidly supplanted by the latter. The farm school is purely a money-making affair with the owner of some farm, approved by the Government, who gets the apprenticeship of some 20 boys of from 14 to 16 years of age in return for "allowing them to receive theoretical instruction" less than one-third of the time from a few teachers employed by the State. In this class, because of its management, may be included one successful school, the National Shepherds' School at Rambouillet, which gives practical instruction in the management and care of sheep. Both board and tuition are free during the three years of the course.

The écoles pratiques were created in 1875 to fill the gap between the farm schools, for the sons of laborers, and the national schools,

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<sup>a</sup> Barillot, V. *Cours élémentaire d'agriculture*, 1902.

<sup>b</sup> Leblanc, René. *L'enseignement agricole*, 1894.

intended to give a secondary education to the sons of the larger landed proprietors. There are now over 40 of these schools, attended by the sons of peasant proprietors or small farmers, and the ministry hopes before long to have one, at least, in operation in each Department. They are usually farms of the better class, carried on with a view to profit, taking pay pupils who are taught the theory and practice of the types of agriculture peculiar to the district in which the school is situated. The director is usually the owner of the farm or the tenant on a long lease. There are usually nine teachers, whose salaries are paid by the State, which also provides from \$800 to \$1,000 yearly for scholarships at each school. The course of study usually covers two years, and the pupils are divided into two sections, performing manual labor and receiving theoretical instruction alternately morning and afternoon.

In France there are a large number of small schools which combine some general agricultural instruction with an education in some special branch, such as the manufacture of cheese and butter, of which there are five, with a course of one year, four of them being for young girls. There are also two practical schools of poultry farming and one of horticulture. These schools are intended to fit young people for managing small establishments and to serve as models for farmers in the immediate neighborhood.

Belgium has one of the most complete systems of agricultural education and research in existence to-day, which is largely a development of the last fifteen years or less. This system was based in the beginning largely upon the French one, but the Government has paid so much attention to meeting local needs that now no other system has more individuality. Agricultural theory and practice are taught in most of<sup>a</sup> the rural primary schools of the Kingdom, as a branch of general instruction. To provide competent teachers, the course of study in the State normal schools includes agriculture, and special normal courses during vacation are given for those already teaching. At least two lessons each week in agriculture must be given in every grade of every primary school, and the Government gives financial and other encouragement to teachers who excel in such instruction.

Just over in the Netherlands all higher instruction in the elementary schools since 1857 has included "the elements of agriculture," but except in 17 of these schools this is to-day interpreted to mean both intensive and extensive nature study. The 17 schools mentioned have extensive courses in agriculture, with considerable technical instruction. Nature study is taught at every training college for teachers in Holland, agriculture and horticulture only at Nijmegen,

<sup>a</sup>Genonceaux, A. The school system of Belgium. Report of the Commissioner of Education, 1904, pp. 1218-9.

Haarlem, and Middleburg, but special diplomas are offered to all teachers for proficiency in these subjects. Nature-study work in these elementary schools is given such an agricultural turn, however, that graduates are fitted to enter the secondary agricultural schools.

In Finland <sup>a</sup> lower agricultural instruction is given (1) in the lower section of the Mustalia Agricultural and Dairy Institute; (2) at more than 20 lower agricultural schools, some State and some private; and (3) in winter agricultural schools for farmers, of which there are several, with a course of seven months the first winter and six the second, the instruction being furnished free by the Government. Many schools of the latter two classes give elementary instruction in dairying, and males are usually barred from this course of one year, or sometimes two years. There are also about half a dozen elementary gardening schools. Forestry is taught at the lower agricultural schools in a very elementary way.

In the Norwegian Government's scheme of education agriculture is taught only in schools ranking as secondary. The British Royal Commission on Technical Instruction <sup>b</sup> reported that in Denmark "it is a national belief as well as a custom that agriculture should be taught in every rural school." The entire elementary course is woven around this subject of such vital import to the prosperity of the people, but so thorough a course is given later that the previous instruction is not called agriculture at all. After completing the elementary school (Folkeskoler) the pupil in agriculture becomes an apprentice under the care of the Royal Agricultural Society for two years on approved farms of the Kingdom, one year on the islands and one in Jutland. The society provides the apprentice with a small collection of books on natural history, agriculture, and stock management, which becomes his property at the end of his service. Before proceeding to an agricultural high school he takes either (1) a course of five or six months' instruction in one of the agricultural schools attached to a primary school, such as he graduated from two years before; or (2) a more complete course of nine or ten months at certain schools of the same class, or at others especially designed for this purpose (Landboskoler).

Elementary ideas of agriculture and forestry are taught in all the rural schools of Sweden, especially by means of school gardens, which most of the Swedish schools possess. There are also two classes of elementary agricultural schools, viz., agricultural schools, of which there are 26, and farmers' schools, of which there are 21. The former are supported by public funds, and their aim is "to give exercise, competence, and ability in all kinds of farm work, and to produce

<sup>a</sup> *Forslag fra den Parlementariske Landbrugskimmission til Ordning af den lavere Landbrugsundervisning*, 1898, pp. 165-168.

<sup>b</sup> *British Royal Commission on Technical Instruction*, 1884, vol. 2, pp. 165-173.

able farm managers." Every school is situated on a large estate, and in 23 of them the course covers two years. All the pupils must have an elementary education before entering, and most of them are at least 20 years of age when they enter. The purpose of the farmers' schools is "to give an elementary theoretical knowledge of agriculture and practice in its scientific application" to those young farmers who would not otherwise receive any education above that of the primary schools of the country. Many of the students come from the poorer classes, and receive free instruction and board. The State pays \$260 annually for each free student, and provides that each school must have at least three teachers. The course of study covers only six months and is given during the winter. Excursions of a week or ten days to the better farms and schools are a feature. The State gives two years of elementary instruction in dairying, preparatory to the courses in the two dairy high schools. For the first year the young women are distributed among 18 dairy stations, and during the second among 8 others, no one being allowed to spend both years in the same station. The first year they are taught the entire care of the cows and dairy plant, the management of a steam engine and separator, bookkeeping, and butter making, including the making of "sour butter" for export. In the second year they learn how to make different kinds of cheese and to judge dairy products.<sup>a</sup>

Germany supports a complete system of agricultural education for all except the laboring classes, who seem neglected, at least in comparison. As is well known, there is no one course of study running through all the German schools, with possible electives, or the choice of different courses in the same school, but rather a series of complete school systems. Consequently, to study agriculture one must attend a strictly agricultural school. But in all these schools, except the agricultural institutes attached to the universities, the subjects which form part of a liberal education are taught, and agriculture, with the sciences of which it is an application, takes only the time which in other German schools is devoted to the dead languages and advanced mathematics. There are two classes of lower agricultural schools, viz., Ackerbauschulen and rural Fortbildungsschulen (continuation schools), the sessions of which are held at night or on Sunday, or in the winter in south Germany—very like the English continuation schools. To enter the Ackerbauschulen a boy must be 14 years of age and have passed through a primary school. The course extends usually over two years, and if given in the preparatory department of a secondary school (Landwirt-

<sup>a</sup> Sundbarg, Gustav. Sweden: its people and industry, 1904. Forslag fra den Parlementariske Landbrugskimmission til Ordning af den lavere Landbrugsundervisning, 1898, pp. 157-165.

schaftsschule) is purely theoretical, while, on the other hand, those schools in country districts with a farm in connection give practical instruction as well. These latter correspond quite nearly to the Amt schools of Norway. When school gardens are attached, they are used only for purposes of demonstration.<sup>a</sup>

The instruction in the rural Fortbildungsschule is given by the regular school teachers, covering a period of two years, and is limited to the principles of agriculture and to supplying deficiencies in general education. In south and west Germany these are often in combination with higher schools, and usually have four or more teachers, the purpose being, as in the Danish people's high schools, to give farmers a better education than they can obtain in the common schools. The agriculture taught is simple, most of the time being devoted to going further with the common school branches. The course extends from November to March for two years, the first of which is usually occupied with common education, the second with agriculture. There are now some 1,500 rural Fortbildungsschulen in Prussia alone, with 2,000 teachers and over 20,000 scholars. Some of these schools are of a special character and give instruction suited to local needs. For instance, there are in Prussia<sup>b</sup> 9 schools for the cultivation of meadows, 118 for gardening and fruit culture, 18 dairy schools, 57 schools of household economy (for girls), 49 horseshoeing and blacksmithing schools, 10 beet culture schools, flax-raising schools, etc. The dairy schools for girls are peculiar in that most of them give instruction in housekeeping, poultry keeping, and gardening, in addition to the course in dairying, which usually lasts from six to twelve months, besides giving graduate courses of three months. Many of these schools give short courses for those who are already well acquainted with the principles of dairying, but who wish to learn the latest methods.<sup>c</sup>

In Switzerland there are 10 winter agricultural schools in the various Cantons, with an aggregate of some 500 pupils annually. These schools very closely approximate in character schools of the same class in Germany. Four cantonal schools are called "Ackerbauschulen" in the Norwegian investigation, but although they begin with rather elementary instruction in their effort to meet the needs of the people, a study of their curriculum and of their reports shows that they should rather be considered secondary schools, as they really rank in the Swiss educational system.

<sup>a</sup> Stand und Entwicklung der ländlichen Fortbildungsschulen in Preussen, 1904. Statistik der landwirthschaftlichen und zweckverwandten Unterrichts-Anstalten Preussens für die Jahre 1900–1902.

<sup>b</sup> Statistik der landwirthschaftlichen und zweckverwandten Unterrichts-Anstalten Preussens für die Jahre 1900–1902.

<sup>c</sup> Forslag fra den Parlementariske Landbrugskimmission til Ordning af den lavere Landbrugsundervisning, 1898.

Austria's system of agricultural instruction is very similar to that of Germany. There are several hundred Ackerbauschulen and Winterschulen, with courses varying from one to three years. The State helps support them, but in no case founds them. The Winterschulen are nearly all under the management of agricultural associations. The first Fortbildungsschule was founded in 1868, and the movement is now universal. In all these schools material for demonstration is secured from the gardens attached to them. There are also lower schools of gardening, fruit growing, hop growing, wine making, etc., but all are operated according to some local plan and so do not lend themselves to grouping. Some have only winter courses; others are more like continuation schools and extend over as many as four years. Miss C. I. Dodd, one of the British educational experts, reported<sup>a</sup> concerning the Hungarian system of education that since 1868 all parents and guardians have been compelled to send their children to school from their sixth to their fifteenth year; and that in all the elementary, higher elementary, and citizens' schools and in the normal schools for teachers, gardening, farming, and agriculture have been obligatory studies since that time.

From a publication issued by the ministry of public instruction of Servia it appears that since November, 1899, the elementary school curriculum for boys has included natural science with agriculture, three hours a week in the two higher classes.

The higher elementary course of instruction in Portugal, as prescribed by the Government code, includes "elementary notions of physics, chemistry, and natural history, as applied to industry, agriculture, and hygiene."<sup>b</sup> There are also elementary agricultural schools at Vizeu, Bairrada, Torres Vedras, Faro, Porto, and Regua.<sup>c</sup>

Though the teaching of agriculture in Japan is of very recent introduction,<sup>d</sup> so alive to its possibilities has the Government been that few countries have now a more complete system. At the present time the educational department is working out a comprehensive plan of nature study and school gardens, to be an integral part of the elementary school system, and has had agents studying the better experiments in these lines in the United States, France, and Germany during a period of some two years. There are in the Empire 47 public and 2 private elementary agricultural schools,

<sup>a</sup> Dodd, C. I. Hungarian education. Special reports on educational subjects [England], vol. 8, 1902, p. 490.

<sup>b</sup> Leitao Technical instruction in Portugal. Special reports on educational subjects [England], vol. 8, 1902, p. 449.

<sup>c</sup> L'Enseignement supérieur de l'agriculture en Portugal, 1900, p. 53.

<sup>d</sup> Education in Japan. Department of Education, Tokyo, 1904.

which have some 3,000 pupils enrolled.<sup>a</sup> For twenty-seven hours a week (exclusive of time spent in practical work) during three years, these children of 12 years and over study the common school subjects, and also soils, manures, agricultural products, stock breeding, sericulture, injurious insects, etc.

That Japan has put forth the most strenuous efforts to meet the needs of her people is shown by the supplementary industrial schools, of which there are over 500, for the teaching of agriculture. In 1904-5 there were 23,000 children enrolled in these schools, most of whom were engaged in work on the land of their parents and were unable to complete the elementary schools. Local conditions are almost wholly consulted in arranging the courses, hours of instruction, etc., for though there is an official course of study, the greatest freedom is allowed as to the length of time devoted to any one subject. In some places the school is in session on evenings of week days, in some on Sundays and holidays, during the winter seasons or between busy farm seasons. The instruction given is very practical, and covers a range of topics as wide as those of even the secondary schools.

Great Britain has not made nearly so much progress as most of the countries just mentioned in taking care of her farming people in an educational way. The most recent critical presentation of the problem with which the United Kingdom is confronted in this sphere may be found in an article by Mr. John C. Medd, one of the British educational experts, in the *Nineteenth Century and Later* for January 1907.<sup>b</sup> Until 1900 agriculture was officially included in the elementary school programme under "elementary science," but the latter was one of the so-called "class subjects," and so under the code could not be taught unless either history or geography was omitted. The introduction of "block grants" in 1900 allowed those teachers who cared to do so to teach "some notions of agriculture," but offered them no encouragement. The New Code of 1904, however, includes "knowledge of the common phenomena of the external world," as has been seen; and if the aim of the primary school, "to fit the boys and girls, practically as well as intellectually, for the work of life," be carried out, nature study will take a distinctly agricultural turn. It is very difficult to grade the special institutions for teaching agriculture proper, for the instruction in the colleges, even, is scarcely more than elementary. But since the other branches taught rank as college subjects, perhaps it had better be considered under that head.

In Ireland, a comprehensive system of agricultural instruction has been planned by the Department of Agriculture and Technical

<sup>a</sup> Primary education in Japan. Department of Education, Tokyo, 1904.

<sup>b</sup> Medd, J. C. Agricultural education in the United Kingdom, *Nineteenth Century, January, 1907*, pp. 108-118.

Instruction since its organization in 1900, and it has been actualized as rapidly as the peculiar difficulties encountered would permit. These have arisen largely from abnormal economic conditions and the unfavorable attitude of the farming population, but the chief hindrance so far has been the lack of trained teachers. The efforts of the Department have been largely directed, therefore, toward developing and supplying trained men.

The entire system as planned contemplates: (1) A central institution for the highest form of technical training for teachers and specialists in agriculture. This has been provided at the Royal College of Science at Dublin (see page 76). (2) One high-class agricultural college to prepare students for the Royal College of Science and to train men as farm managers and the like. This has been provided in the Albert Agricultural College, at Glasnevin, which now offers a course of one year, and in which 51 students were enrolled in 1906-7. (3) Provincial institutions, in which young men may be taken as apprentices for a year and taught practical and technical agriculture. Already three such "stations" have been established and others are contemplated. (4) Winter classes, in which sons of farmers may obtain technical training during the months in which they can best be spared from farm work. Twenty-eight such schools were in operation in 1906-7, with 445 students. (5) One higher institution for training women in the domestic economy of the farm. This provision has been made at Munster Institute, Cork, with such success that a similar school will soon be in operation in Ulster. (6) Local day schools for training young women in rural domestic economy. Five of these have been established, and if they prove successful it is expected that further instruction of this character will be provided. (7) A system of itinerant instruction in agriculture, horticulture, dairying, etc., by which farmers and their families may be reached directly. The itinerant instructors are appointed and controlled by local committees, the plans of the Department contemplating at least one in each county. In 1905-6 the 23 instructors in agriculture then employed attended 1,169 farmers' meetings, delivering lectures and taking part in discussions, made 2,082 field demonstrations and 439 field experiments, and gave advice by letter in 25,000 cases. Twenty-eight counties employed such instructors in 1906-7, and four others took steps in that direction.<sup>a</sup>

Happily England has pursued a different course with her colonies. Every effort has been made to encourage agricultural education in Jamaica and the other West India islands, and with conspicuous success. Special grants for this teaching are given, and the subject

<sup>a</sup> Ireland, Royal Commission on Congestion in Ireland. Appendix to the Fourth Report, Dublin, 1907, pp. 181-189. For further details of the Irish system, see Appendix II of this number of the Bulletin.

is taught in most of the elementary schools of the islands, the system being modeled after that of the rural schools of France. School gardens are common, and on most of the islands courses of lectures are provided during the holidays for active teachers, whose expenses are paid by the imperial department of agriculture in the West Indies.<sup>a</sup> So well satisfied is the British Government with the results that larger appropriations are freely given for the continuance of the work. In speaking on this subject before the House of Commons, Mr. Joseph Chamberlain said: "I regard the whole of this cost as being an expenditure intended to relieve the British Government of future charges."

In the Straits Settlements a Malay translation of an English textbook on the Principles of Agriculture is used as a reader in all the native schools, and in the English schools agriculture is one of the extra subjects of the code, and thus may be taught. The elements of agriculture are taught as a specific subject in the Government schools of Ceylon, for which a primer has been published and is used. The rudiments of agriculture are taught in connection with the Fijian botanic station and technical school at Viti Levu, owing to which the natives have learned how to propagate the more important food and economic plants. It is less than a decade since agriculture was made a part of the general educational programme of the lower schools of India, but already there are many good text-books both in English and the vernacular, and good work is done. The change was largely brought about by the action of the Government in placing agricultural degrees, diplomas, and certificates on the same footing as corresponding literary and scientific degrees for admission to Government appointments. For over six years now the Government has labored "to make instruction in the rudiments of agriculture a part and parcel of the primary system of education of the country." The botanic gardens of the British colonies and protectorates in Africa, some of them established almost twenty years ago, are all teaching stations, like that in the Fiji Islands. Indeed, their primary aim is to instruct the natives in the agricultural knowledge and methods of the Europeans. The duties of the director of agriculture of Zanzibar are chiefly educational. Natal provides for the teaching of the principles of agriculture in three European schools and in all the native schools, and fieldwork is compulsory there for all school children, boys and girls alike. Practical agriculture is taught in the mission schools of the Gold Coast, and in Malta the third reader contains short lessons on that subject.<sup>b</sup>

<sup>a</sup> Sadler, M. E. The teaching of agriculture in elementary and high schools in the West Indies. Special reports on educational subjects [England], 1901, vol. 4, pp. 592-833.

<sup>b</sup> Wallace, R. H. Agricultural education in the British colonies. Journal Society of Arts, vol. 48, pp. 336-339.

Elementary agriculture is a part of the school curriculum of New Zealand, which has adopted State text-books, some of which are used in parts of Australia. Most of the States of the latter country are considering the introduction of agriculture into their schools, but are hampered by their system of payment by subjects. Victoria gives her broad nature-study course such an agricultural trend that the question seems happily solved there. Lectures on agriculture are given to the young men on the four Government experimental farms of New South Wales who live there for two years each for the sake of the experience gained.<sup>a</sup> In South Australia "agriculture is taught as a specific subject in the country schools." All the colonies publish agricultural bulletins, which are sent free to farmers willing to pay the postage.

The consideration of nature study in Canada included, of necessity, a description of what the Dominion is accomplishing in elementary agricultural instruction in her schools. It is not easy to differentiate these two branches throughout the eastern Provinces, for in many places we, in the United States, would call certain teaching agricultural which in Canada goes under the title of nature study. In the Northwest Territories, however, agriculture proper is taught in Standard V of the public schools, following nature study in the first four standards. The so-called "elementary science" of Manitoba, taught in the higher four standards of the elementary schools, is rather an elementary form of agriculture taught according to the method of nature study. In Ontario, on the other hand, it is the work in nature study of the first four forms that rather approximates elementary agriculture.

The minister of colonies and agriculture of Bolivia has issued an elementary text-book of agriculture for the primary schools of that country. It is probable that the near future will witness a considerable development of agricultural education in a number of the countries of South America.

So far as formal instruction in schools is concerned, there is but little elementary agricultural instruction given in the United States. But considering the fact that an innovation in our school system must work its way slowly, instead of being put in practice the country over by order of the Government, as is the case in Europe, we have every cause for encouragement. Manual training is taught in practically all of our cities to-day, while only a decade and a half ago the movement was fighting for its very life. The effort to introduce agriculture into the curriculum of at least our rural schools is very recent, and in some parts of the country it is the result of successful nature-study teaching to which an agricultural trend has been given.

<sup>a</sup> Wallace, R. H. Agricultural education in the British colonies. Journal Society of Arts, vol. 48, p. 333.

To-day no other educational question is exciting more consideration than that of teaching agriculture in our elementary schools. Since about 1901 this agitation has spread all over the country, and has been taken up by bodies differing widely in purpose. The farmers of the Middle West were perhaps first in demanding it, but before January 1, 1907, the movement had so spread that at present an examination of teachers in agriculture is required in Alabama, Georgia, Mississippi, Missouri, Nebraska, New York, North Carolina, South Dakota, Virginia, and Wisconsin, while agriculture is required by law to be taught in the rural schools of Alabama, Georgia, Louisiana, Maine, Maryland, Mississippi, North Carolina, South Carolina, South Dakota, Texas, and Wisconsin. One sees, then, that a body of teachers is growing who will be able to teach agriculture intelligently when it seems best to do so, and to interest their pupils in it now. The teachers themselves have, in a number of cases, urged attention to this subject, and the State educational authorities in more than 12 States and Territories have done likewise by offering regular courses in agriculture in their State normal schools. The 7 State normal schools of Wisconsin are furnishing their State with a host of teachers with some equipment for giving elementary instruction in agriculture, and similar work is being done in 3 such schools in Illinois, 5 in Missouri, 4 in Nebraska, 2 each in North Dakota, Oklahoma, and Washington, and 1 each in Alabama, Georgia, Michigan, Porto Rico, Texas, and Virginia. In Missouri, State Superintendent Carrington has included in his course of study, which has been adopted by nine-tenths of the counties of the State, not only nature study in the first four grades, but a study of "How plants grow" for the spring of the seventh year, and a definite course in agriculture for the eighth year, and he has published a pamphlet on The Elements of Agriculture for the use of rural teachers, which is exceptionally good in the hands of those who feel helpless with the subject but who wish to do the best possible under the circumstances.

The committee of five of the National Educational Association, already mentioned,<sup>a</sup> recommended that agriculture be taught in the last three years of the common school, but that it be not made mandatory upon the teacher of the 1-room rural school, because he is apt not to be prepared to teach the subject, and often the school year is too short to permit an addition to the course of study unless the age of leaving school be raised. It might be well to point out here, in passing, that the introduction of agriculture into the rural schools of France and Belgium has caused parents to keep their children in school from one to three years longer. If the subject were well taught in the United States, there is no reason why the same result

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<sup>a</sup> Industrial education in schools for rural communities. Report of the committee of five, National Educational Association, 1905.

should not obtain. The American Civic Association is urging that elementary agriculture be introduced into our country schools, at least in the shape of gardening. The American League of Industrial Education, organized in 1904, has for its aim to promote "an industrial public school system which should include the teaching of domestic science and both agricultural and manual training in all public schools," and "the establishment of public manual-training school farms in every county of the United States, and of as many such manual-training school farms in the vicinity of all cities, by State, municipal, and National Governments, as may be necessary to give every boy the opportunity to learn how to earn his living by his labor, and to till the soil for a livelihood, and to get his living from the land."<sup>a</sup>

Certain of the State universities and many of the State agricultural colleges are assisting in this movement. Cornell University is giving an ever greater agricultural bearing to the bulletins sent to the junior naturalist clubs over New York State, and the State educational department has prepared a valuable syllabus on agriculture for the elementary schools of the State. Iowa State College is using all its influence toward interesting the boys and girls of the State in agriculture, and during 1906 an extension department was organized with a faculty of six members. The Ohio State University has employed Mr. A. B. Graham as superintendent of agricultural extension work, whose duty it is to cooperate with the common schools in every way possible in extending such education. Agriculture is taught in a number of the schools of Indiana, where State Superintendent Cotton has for some time been publishing monthly bulletins to prepare the teachers for such instruction, and where the State board of education is at present recasting the course of study so as to include this work for the country schools of the State. Purdue University is quietly but efficiently working toward the same end, especially by stimulating favorable sentiment in the farmers' institutes.

The University of Illinois has from the beginning led this movement in its State, and the course in agriculture which is followed in many of the rural schools of the State was prepared by teachers in the college of agriculture. The course is arranged by months, and a large number of experiments are outlined, with suggested observations.

Perhaps the extent to which any educational movement is gaining ground may be gauged by the rate of publication of text-books on

<sup>a</sup>The teaching of agriculture in the rural common schools Ninth report committee on methods of teaching agriculture, Association American Agricultural College and Experiment Stations. Office of Experiment Stations, circular 60, 1905 p 4

that subject. Certainly this is true of the one in question. Beginning some three or four years ago with texts issued hurriedly to supply the first demand, there has been a constant improvement, although as yet we have none in America comparable to those of some foreign countries, especially of France. A special text has been written for the use of the Nebraska schools, and others have been adopted in Louisiana, Georgia, Tennessee, North Carolina, Alabama, Virginia, most of the counties of Maryland and Florida, and by a number of counties in California. United States editions of some of the better Canadian books have been published.

In Illinois, Indiana, Iowa, Kansas, Nebraska, Ohio, and Texas various county superintendents have solved the problem of promoting agricultural education where formal instruction in the schools seemed impossible by the formation of boys' agricultural clubs, and in every case that I know of there has been hearty cooperation of the farmers' institutes and of the agricultural colleges. The movement in Macoupin County, Ill.,<sup>a</sup> was started in 1901 by the president of the farmers' institute, who had been unable to get more than a dozen or so of the farmers to attend the annual meeting of the institute, notwithstanding several advertising schemes which he had tried. Finally he advertised that he would send free to any farmer boy who applied as much of the finest seed corn procurable in the State as a 1-cent stamp would carry, the boys to exhibit their product at the annual meeting of the farmers' institute and receive small prizes for the best corn raised. Five hundred boys responded. When the time for the meeting came the farmers were told they might stay away if they cared to. This meeting was for the boys, who were there by scores with their corn. It was judged by an expert from the State agricultural college and pronounced as "fine a display of corn as he ever had seen." But the farmers themselves were there, too—over 500 of them—and the problem had been solved. The other county superintendents of schools took up the idea, organized boys' agricultural clubs in their schools, and gave pure-bred seed corn to them gratis. The boys went to their teachers with their difficulties and they studied the problems of practical agriculture together, school gardens were introduced, and the movement before long spread into other States.

One of the most fascinating exhibits at the Louisiana Purchase Exposition was the 1,000 little pyramids, each of 10 ears of corn, grown by 8,000 Illinois boys, members of these clubs. Many of the counties have girls' clubs as well, the members of which do practical work in domestic economy, horticulture, and floriculture, all with especial reference to farm life. The Ohio State University has fos-

<sup>a</sup> Crosby, D. J. Boys' agricultural clubs. Yearbook Department of Agriculture, 1904, pp. 489-496.

tered this movement in Ohio, where, in three years, there have been organized 35 boys' clubs in 22 counties, with an increase last year of 100 per cent. The university furnishes to those children of rural schools who apply packages of vegetable seeds, flower seeds, seed corn, and litmus paper for testing the acidity of soils. The Texas Farmers' Congress cares for a like movement in its State, where the girls are as much looked after as the boys. In Iowa Superintendents Miller, of Keokuk County, and Ports, of Iowa County, organized boys' agricultural clubs in 1904, within twelve days of each other. Both undertakings were even more successful in 1905 than in 1904, when each numbered over 300 active members. Miss Laura Fitch, superintendent of the Lucas County schools, held a school fair during the fall of 1905, at which the products of her boys' and girls' club were exhibited. The agricultural products were judged by Professor Holden, of the State agricultural college, who gave a lecture to schoolboys only on the selection and testing of seed corn, which held the attention of the little fellows from start to finish. Miss Rausch, professor of domestic science, was present also, and talked to the girls and their mothers. A small admission fee was charged all except exhibitors, and almost 600 people of the county paid to see the handiwork of their school children, of which the local papers and the judges spoke very highly. Miss Fitch believes the schools of her county are doing better all-round work for this one feature and that the children are more interested in their school work than ever before. A number of boys and girls of Mason County, Ill., have learned in their club to raise corn of such a grade that it readily sold for \$1.50 per bushel, while that of their fathers was bringing the customary 40 cents.<sup>a</sup>

In working over the material for this study two surprises were experienced, so gratifying that they must be mentioned here in some detail. As oases in the midst of a barren desert of school and agricultural reports there stand out the 1905 report of Mr. O. J. Kern, superintendent of the Winnebago County, Ill., schools, and the 1905 report of the Illinois State Farmers' Institute, of which more will be said later. Superintendent Kern's report of 80 pages is unlike any other school report I have ever seen. At first glance it is more like the catalogue of an expensive finishing school. Printed on fine book paper, filled from cover to cover with pictures, all of them beautiful except where one is used occasionally to preach a lesson not to be enforced otherwise, 2 or 3 pages of figures which are really eloquent in their exposition of how much cheaper a fine consolidated township school is than half a dozen small, inefficient 1-room schools, descriptions of school gardens, boys' agricultural clubs, and girls'

<sup>a</sup> Industrial education in schools for rural communities Report committee of five, N. E. A., 1905, p. 60.

home culture clubs—it is no wonder that the Louisiana Purchase Exposition gave the Winnebago County schools a special gold medal for their educational exhibit. A large share of the pamphlet is devoted to a description of the school gardens, of the work done by the boys' and girls' clubs (which have now over 500 and 300 members, respectively), and of the two days' excursion made each year by them to some State agricultural college. There is also a plea for more extensive work along the same lines and for the beautifying of the school houses and grounds by planting trees, shrubs, vines, and flowers around them. In a county where the farmers are already raising 50 bushels of corn per acre, school gardens and boys' clubs have been heartily indorsed by the farmers' institute, because many members of the club raise over 100 bushels per acre yearly, some 125, and one boy 150. The Illinois experiment station wanted to know whether or not sugar beets could profitably be raised in the State; 70 of the Winnebago boys tried it and sent in to the station the finest beets received that year. The club maintains a lecture course of its own and has experts from neighboring States come and speak on their special lines of work. The farmers now offer cash prizes for the best products instead of asking the merchants of Rockford to donate prizes in goods, which the merchants are willing to do, however. From 200 to 300 persons go annually on the excursion of the club, for which the railroads have made rates of about half a cent a mile, considering that to be nothing more than business policy. Two visits have been made to Urbana, Ill., one to Madison, Wis., and one to Ames, Iowa, over 300 miles away. The circulating libraries sent from one school to another contain, partly at the request of the pupils, a greater proportion of agricultural books and pamphlets every year.

The influence of such organizations upon education is felt now in a rapidly increasing number of districts each year, from Michigan to Texas, from Kansas to Pennsylvania. Mr. Dick J. Crosby, of Washington, D. C., has described this movement in the 1904 Yearbook of the United States Department of Agriculture, and in noting some of the results observed he says that the boys have learned to observe more closely the crops and things affecting the crops; they have met and learned to solve some of the problems in the improvement of crops; they have learned to keep simple accounts, to read good literature, and to know the sources of agricultural literature; their views have been broadened by contact with others and by visiting institutions of learning, and finally the power of taking the initiative has in many cases been strongly developed in them. Collectively, the social instinct—of almost paramount importance in rural districts—has been developed in them, while the influence upon the communities has been most wholesome. This last-named result

can be seen in many ways. In Illinois, for instance, the State Farmers' Institute took the matter up, and in most of the counties one or two meetings of the local institutes each year are given over to the school children and teachers, while often the teachers' and farmers' institutes unite for a meeting. Indeed, during 1904-5 the total attendance at the farmers' institutes in Illinois was in round numbers: Farmers, 20,000; wives, 10,000; teachers, 2,000; pupils, 20,000.

In 1904 the Scott County Institute gave as a first premium for corn judging by school boys a trip to the University of Illinois and two weeks' instruction at the college of agriculture. So many counties in 1905 did the same that the dean of the college arranged for two weeks of suitable instruction for boys during the latter part of January, 1906, in such things as the study of corn, stock judging, rope tying and splicing, milk testing, etc., a course which some eighty school boys attended. The county superintendents and individual teachers cooperated to encourage corn judging contests, and most school boards and teachers accepted the two weeks spent in the college as the full equivalent for the time lost from the home school. An elementary course in agriculture has been added to the State course of study for common schools at the demand of the State Farmers' Institute, which has also induced the State normal schools to teach agriculture to all their students.

This brings us to the 1905 report of this organization, which is a most notable one. It has scores of illustrations, showing the condition and progress of both agriculture and education in Illinois. It contains the addresses of Miss Van Rensselaer of Cornell University, on The Relation of the Farm Home to the University; of Superintendent O. J. Kern on Boys' Clubs; of Dr. David Felmley on Domestic Science in the Normal Schools; of Prof. L. D. Harvey, superintendent of schools in Menomonie, Wis., on What the Country Schools Should Do for the Country Boy and Girl; and of Prof. O. T. Bright, for eleven years the superintendent of the Cook County, Ill., schools, on the Improvement of the Farmers' Schools. And this was not a teachers' convention. Along with these addresses there were others by some of the greatest agricultural experts of the Middle West. Surely great progress has already been made when a host of farmers and their wives come together from all over a large State to have such a feast served to them. I feel strongly that every teacher who is able to obtain this report ought to read it as carefully and thoughtfully as if it had been promulgated as an educational document.

There are some few primary schools in the United States in which the basal instruction is agricultural, where the boys are taught, young as they are, to become practically self-supporting, and so independent, but without any neglect of formal education; schools, that is to

say, quite like the famous Abbotsholme in England, except that they are lacking in sufficient equipment, and that, almost without exception, they are farm schools for indigent boys, or for waifs not yet vicious, but who have been committed for vagrancy. Best of all these schools and most widely known is the Boston Asylum and Farm School for Indigent Boys, on Thompsons Island, in Boston Harbor, a school with ninety-two years behind it. Only boys of good morals and fair physique will be accepted at this institution, on being relinquished by parents or guardian until they are 21. Boys work half of each day and attend school the other half. All the common branches are taught, and a diploma admits without examination to the Boston high schools. A number of industries are taught, and well taught, while all in turn help with the making and mending of clothes, cooking, baking, laundering, and farm work. For many years "simple instruction in the sowing of seed, care of crops, harvesting, etc., " has been given, and in 1902 a course in agriculture, under a trained college man, was begun, which extends through all the grades, and with which the instruction in all the other branches is correlated, so that it is probably the first grammar school in the country to offer a basal course in agriculture. The island is well stocked with animals and fowls, and the economic side of the subject is emphasized; for example, one class has undertaken to keep the brown-tailed moth off the island, another wages war relentlessly on the mosquitoes, each with success. One of the boys writes, spontaneously, "every month we have an examination in agriculture, and most of the boys like it very much." Surely further comment is unnecessary.

The Plummer Farm School, on Winter Island, Salem, Mass., is a smaller institution of the same kind, sixty years old, usually with 30 to 40 boys in attendance, and is giving proportionately as good results. From the Boys' Busy Life Club of Milwaukee, managed by the junior probation officer of the city, has grown the Wisconsin Home and Farm School, opened in 1903 at Delafield to indigent or neglected boys from anywhere in the United States, without regard to nationality or creed, the number being limited only by the support received.

The Good Will Farm, at East Fairfield, Me., is unique in that it offers the same advantages to girls as to boys, and has been successful through many years, though dependent from month to month upon voluntary contributions. The Beulah Home, at Boyne, Mich., is a farm school of 120 acres for boys of any religious faith, where nothing is given the boys free, work is not compulsory, though study is, but the boys get credit slips for all that they do. The boys govern themselves and staying at the school is not compulsory, but there are no desertions. The boys are allowed to work away from the school during the twelve weeks of summer vacation, and have the money they receive for their own use.

A remarkable institution with a remarkable history is the Berkshire Industrial Farm, at Canaan Four Corners, N. Y., which is entirely dependent upon charity, and is for just the boys whom the schools mentioned above refuse to take, that is, the "unruly, vagrant, and vicious," and even for young criminals, who may be allowed to go there by judges knowing of the school and of its twenty years of successful efforts at making citizens. There are usually from 70 to 100 boys there, some of them very young indeed, who are kept in almost a separate environment from the older ones. Almost all the boys who have been there have been transformed into good men and good citizens by "a course of steady and interesting work for mind and body, imposed by an authority at once kind and inflexible; \* \* \* the habit of work becomes fixed only by keeping the boy constantly and usefully employed." Manual training in other than agricultural lines is taught, but Superintendent Mayo has not found such good effects as from agriculture—from teaching the boys to make an honest living for themselves out of doors, in the country. In Everybody's Magazine for October, 1905, appeared an article by Eugene Wood entitled "A school for boys," describing the admirable Boys' Industrial School at Lancaster, Ohio, maintained by the State for boys convicted of habitual truancy or petty crimes. The article is replete with cases of men now prominent in business and social life who go back to Lancaster to visit, with gratitude, the school that "made men of them," and of boys who call Lancaster "home" as if they mean it. Since then the press has often contained letters from parents asking why there were not such schools to which they might send their boys for both education and training. In 1901 appeared in the Boston Transcript the statement of a widely traveled and highly educated man: "It is an interesting and curious fact that the three best boys' schools in the country are available only to Indians or negroes (Hampton and Tuskegee) or boys from indigent families (Thompson's Island)." Statements from all the schools mentioned above remind one forcibly of those to which Mr. Wood has given such wide publicity.

In April, 1897, Edmond Demolins published in Paris his book, "*À quoi tient la supériorité des Anglo-Saxons*," which in a few weeks ran through some ten editions, and was quickly translated into many other languages.<sup>a</sup> Few books of recent times have stirred whole nations to thought more than this one has done. M. Demolins, one of France's most scientific economists, asserts in the beginning that "every nation organizes its education in its own image, in view of its habits and customs," and that if a nation is to thrive its educational system must above all else "prepare men capable of

<sup>a</sup> Demolins, Edmond. *Anglo-Saxon superiority*, 1898.

creating for themselves independent positions and really taking care of themselves." From this view point he discusses the question, "Does the French, the German, and the English school system form men?" and answers his first two questions in the negative, the last in the affirmative. But it is not the great English "public schools"—Eton, Rugby, etc.—which are commended, but rather such schools as Abbotsholme and Bedales, which M. Demolins describes in detail, and to which he gives his unqualified approval, for such schools are first of all for the prime purpose of forming men capable of taking the initiative. It is directly owing to this book that other such schools have been founded in France, Germany, and Switzerland, and I have not been able to learn of one of them that has failed of success.

Certainly this book and its fundamental questions are germane to our consideration. Do our schools, with their course of study decided beforehand by college entrance requirements, form men? We need not be pessimistic, of course. The introduction of manual training and domestic science has brought us a long way in the right direction. But these are not available to rural children, nor is the most fundamental science of all—agriculture—provided for, as at Abbotsholme and its prototypes, where agriculture is made the basal study. We are not deprived of models, however, either in primary or secondary schools. Thompsons Island, the Berkshire Industrial Farm School, and like institutions unquestionably do form men, and that from material not inferior at all, but rather misdirected in the beginning, so that the results are the more marvelous. Is it not passing strange that such examples as these, and the few large secondary schools of analogous methods, should have so long fulfilled their own mission without teaching us more about the best system of education—that which should give its special attention to forming men?

We have had for a number of years in our country another class of schools, about which but little is generally known, whose sole purpose from the beginning has been to form men and women rather than scholars, namely, the Indian schools of the United States. Each annual report of the Superintendent of Indian Schools since 1882 has been a record of the attempt to make the Indian students capable of creating independent positions for themselves, and really taking care of themselves. Since Miss Estelle Reel became superintendent, in 1887, the teaching has been given more and more an agricultural bearing, and with the most satisfactory results. "Twenty-five per cent more Indians are self-supporting now than ten years ago," she says in the twenty-first annual report of the Indian schools. Wherever the schools are large enough to command the facilities, those industries are taught which the Indian might use at or near his own home. Most of the young Indians go back to their allotments, upon

which the teachers urge them to make their homes, instead of leasing their land or neglecting it for town life. Consequently, of all the occupations open to them, those of farming, dairying, and stock raising are of most importance. In 1901 Miss Reel issued a course of study to be followed in all these schools, which had been worked out during three years of planning and observation. This course pays more attention to gardening and agriculture than to any other subject, gives full outlines of the work by years, requires gardening and practical work from the first school year to the end, and gives concrete instances of ways in which various agents and teachers have made the work interesting to the boys and girls, instead of drudgery, as the Indian naturally considers the tilling of the soil. The students are taught how best to raise and preserve the grasses which they use in basket making, and several distinctly indigenous arts are thus preserved.

The results are admirable. Subsequent reports show increased interest in agriculture on the part of both teachers and pupils. Children in schools near their own homes carry home vegetables which they have raised and cook them for their parents, so that a diet partly vegetable formerly a rare occurrence is now a more usual thing among the adult Indians. The graduates who go back to farm their allotments necessarily give up a nomadic life. The "blanket Indian" is fast disappearing. Miss Reel in 1904 reported having seen small gardens near tepees, in a few places "the direct outcome of the instruction at school." Agriculture is teaching the Indian the importance of steady habits to an extent he has never learned before. Above all, it has taught him to be self-supporting and not to depend upon Government rations and allowances. It has already raised the Five Civilized Tribes of the Indian Territory to the level of American citizenship, so that the time is already at hand when the Five Nations will cease to exist and will become merged into our own people.

There are in the South a number of schools for colored people somewhat analogous to those just described, such as the Brick Agricultural, Industrial, and Normal School, at Enfield, N. C., which has over 1,100 acres of land under cultivation and which has a considerable endowment. But most of these schools accommodate their curriculum more or less to the craving of the negro for a literary education, more than seems best if there be kept in view what we have assumed to be the true ideal of education—to make men; and examples of the better of these schools will find consideration later.

It is true that there are obstacles in the way of a sudden and general introduction of agriculture into the rural school curriculum; obstacles so serious that the committee of five of the National Edu-

cational Association recommended <sup>a</sup> that "any law making mandatory the teaching of the elements of agriculture, manual training, or domestic science in the entire body of rural schools within a State is unwise;" but it seems to the writer that, grave as the difficulties confronting us are, they are not insuperable. The lack of good text-books is less and less apparent, and in a number of States the lack of properly trained teachers, as well, is becoming less. This latter deficiency is the one which appears gravest to the committee of five, and to it are due in large part the failures of the past. Perhaps the most serious trouble is our national one—that of the lack of professional training for rural teachers, and, consequently, their lack of initiative and their necessary dependence upon text-books. This is being overcome somewhat in certain States which, like Michigan, are establishing small county or district training schools for rural teachers and instructing them in the elements of agriculture, among other things. A dozen other difficulties might be chronicled, such as the short school year, already overcrowded programme, lack of equipment, great number of recitations each day, etc.; but these may all be summed up in the one phrase, "inefficiency of our rural schools." Their condition certainly is not one most to be desired. More than 95 per cent of their pupils never go to any other school, but their curriculum shows the constant struggle to fit the 5 per cent to go to a high school with a course governed, in turn, by the college entrance requirements.<sup>b</sup> Is there any remedy? There seem to me to be two, each of them needed: (1) Consolidated schools, and (2) nature study and the elements of agriculture taught as best may be done under the circumstances.

To consider the second rubric first, the committee of five recommends that teachers in all the States be made to prepare themselves for this teaching as soon as possible, by (1) statutory provision requiring all teachers in the rural schools to pass an examination in nature study and elementary agriculture (which we have already seen has been done in a number of States); and (2) by including at least one book on agricultural instruction in each teachers' reading circle course in States having such a course. One might suggest, in addition, that the State agricultural colleges should provide short courses for teachers, and especially should offer such courses during the summer. All normal schools ought to introduce agricultural courses as soon as possible, as has been done in a number of States. Indeed, the most admirable plan at present is that of Nova Scotia, where the provincial normal school and the agricultural college are

<sup>a</sup> Industrial education in schools for rural communities. Report committee of five, N. E. A., 1905, p. 10.

<sup>b</sup> *Ibid.*, p. 14.

affiliated and all normal students are required to take certain short courses in the college. But even without such professional training as teachers must have, to do the best work, a considerable degree of success may be attained where an active and earnest effort toward that end is put forth.<sup>a</sup> There have been noted above instances of remarkable success in those States where the teaching of agriculture is made compulsory. Superintendent Carrington, of Missouri, himself one of the committee of five, states in his course of study (p. 48), and he speaks from experience, "It is not necessary for the teacher to have training in scientific agriculture to teach this work well." In many an isolated county of the Middle West an enthusiastic county superintendent of schools has secured magnificent results by interesting the children themselves and by obtaining the cooperation of the local farmers' institute and of the State agricultural college, and so has fairly forced his teachers to fit themselves for instruction along the line of greatest interest.

As with nature study, this is a subject which the teacher should know as thoroughly as possible, but at the same time, if the pupils are wisely directed in this branch it will not be demoralizing to the school, the pupils, or the teacher for the latter to work along with the children and to allow them to do as much of the teaching as they are capable of doing. The United States Department of Agriculture issues a number of pamphlets which the school should have for its use, among them an excellent bibliography <sup>b</sup> of works on elementary agriculture, horticulture, and reference works; Office of Experiment Stations Circular No. 60,<sup>c</sup> already referred to; and a large number of farmers' bulletins, especially Nos. 54, 109, and 218. The report of the committee of five<sup>d</sup> should be in the hands of every teacher. The teachers of Missouri have been very successful with the Elements of Agriculture for Public Schools, published by Superintendent Carrington in 1904, which is just the thing for teachers who are willing but who lack initiative. The Illinois Course of Study, which is already largely used throughout the Middle West, contains an outline of agricultural teaching prepared by Dean Davenport, of the State agricultural college, which is successfully used in its home State. From the publisher of the course of study can be

<sup>a</sup> The teaching of agriculture in the rural common schools—Ninth report, committee on methods of teaching agriculture, Association of American Agricultural Colleges and Experiment Stations. Department of Agriculture, Office of Experiment Stations, circular 60, 1905, p. 8.

<sup>b</sup> Crosby, D. J. Progress in agricultural education 1906. Annual report, Department of Agriculture, Office of Experimental Stations, 1906, pp. 213-300.

<sup>c</sup> The teaching of agriculture in the rural common schools, 1905.

<sup>d</sup> Industrial education in schools for rural communities. Report committee of five, N. E. A., 1905.

obtained, at 1 cent each, pamphlets<sup>a</sup> in five series of a dozen each, on the study of farm crops, farm animals, horticulture, agriculture, and animal husbandry, all written by experts. Each school should have the bulletins of the experiment station of its own State sent free on request, and as many as possible of the bulletins on nature study mentioned in Chapter I. There is by no means a dearth of material—it is only necessary for the teacher to attack the problem with sufficient energy and tact.

It has been difficult to write this chapter without making a good part of it an argument for the consolidated school. The advantages are many, the disadvantages are so few as to be practically negligible. Experiments in some thirty States have shown that it is cheaper to transport the child to the school than to bring the school to the child. Not only is the actual expense less, but there results a much better building of several rooms, hygienic and with modern equipment, better teachers, longer recitation periods, avoidance of exposure to the weather, longer school years, increased average attendance, and a raising of the age when the children leave school, as well as a multitude of other advantages. Half of the school children of the United States go to rural schools, and they have a right to demand that their schools be efficient, but that is impossible under present conditions. The only remedy is consolidation. Dr. J. W. Robertson, at the head of the Macdonald educational movement in Canada, said in the presence of a large number of Ontario farmers: "Suppose you start for a creamery with 100 pounds of milk, and 45 pounds leak out on the way, could you make your business pay? And still, of every 100 children in your elementary schools, 45 of them fall out by the way—in other words, the average attendance is but 55 per cent of the school children. The consolidated schools in the five eastern Provinces, with their gardens, manual training, and domestic economy, now bring 97 of every 100 children to school every day—and with no additional expense to you." Doctor Robertson's reasoning is cogent here. County superintendents who have one or more consolidated schools are annually publishing statistics showing a largely increased number of boys and girls over the age of 14 over the number before or the number of such pupils in groups of analogous schools. Consolidated schools would not only make possible able teaching of agriculture, but would also make the consolidated rural school as efficient in every way as are the schools of our towns.

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<sup>a</sup> Parker's agricultural leaflets.

## CHAPTER IV.

### SECONDARY AGRICULTURAL EDUCATION.

A thorough and comprehensive system of agricultural education is of more importance to France than to many other countries, because, owing to the law of divided inheritance, most of the sons of French peasants will one day have a strip of land of their own, if indeed they do not first purchase one with their savings, as many are doing. In small communes one person in every four is a proprietor. Whenever any large estate comes on the market it is bought up by a syndicate or speculator and cut up into small farms, which are at once snapped up by peasants.<sup>a</sup> It is largely because of this condition that France has such an excellent agricultural system and that the agricultural schools which the Government ranks as secondary are really on a par with the higher institutions of several other countries.

Instead of maintaining a large number of small secondary agricultural schools, France supports three large national agricultural schools in widely separated districts, at Grignon, Montpellier, and Rennes, with the purpose of "disseminating among the cultivators of the country the great discoveries of modern science, in order that the educational standard of the rural landed proprietors and farmers shall be raised so as to make them enlightened and expert agriculturists." The teaching staff of each is about 25 and the course of study covers two years, but great freedom in the arrangement of the curriculum is allowed, to meet the needs of the various sections of the Republic. Grignon deals especially with artificial pasturage, the cultivation of cereals, stock breeding, and the wine industries of northern France. At Montpellier, where students from most of the southern countries of Europe congregate, the types of agriculture prevailing on the shores of the Mediterranean are studied, especially vine and olive culture, sheep farming, breeding of silkworms, and the making of wine and olive oil. Rennes pays special attention to cider making, pasturing, farming on the métayer system (on shares), and the agricultural products of most importance in western France. The students of all three of these schools must spend their vacation on a farm, and report what takes place there.

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<sup>a</sup> Brereton, Cloudeley. The rural schools of northwest France. Special reports on educational subjects [England], vol. 7, 1902, p. 217.

Four special schools should be included here, namely, the National School of Horticulture at Versailles, of Agricultural Industries at Douai, of Dairy Farming at Mamirolle, and the Colonial Agricultural School at Tunis. The course of study of the School of Horticulture extends over three years, tuition is free, and 40 pupils only are admitted annually, although foreigners may be admitted by special permission. The work is divided into the following sections, from one of which to another the pupil passes each fortnight: The growing of fruit trees, of early vegetables, of hothouse plants, flower gardening in the open air, ornamental arboriculture, vegetable gardening, and work in the shops. Under no consideration may a foreigner be admitted to the National School of Agricultural Industries at Douai, which sends out trained managers and foremen capable of directing brewing, distilling, sugar making, cheese making, and of executing the orders of chemists and engineers in an intelligent spirit. The course of study lasts two years and the holidays are spent by students in private factories. The Mamirolle Dairy School was organized to perfect methods of making Gruyère cheese, but now teaches everything connected with the manufacture of butter and of the different kinds of cheese suited to the French market. The course lasts but one year, and foreigners may be admitted only in case of a vacancy not applied for by a French student—practically an unheard-of thing.

The Colonial Agricultural School at Tunis was organized in October, 1898, to deal with the kinds of agriculture most prevalent in Tunis and the French colonies, and is quite like the three national schools in France, with a two-year course. An experimental garden and orchard in connection collects plants and fruit trees from all climates, and tests which are most suitable for propagation in northern Africa. Large numbers of young olive trees are produced, which are sold to colonists at low rates.

Both agricultural "schools" and agricultural "sections" are included in the Belgian scheme of secondary education,<sup>a</sup> the former giving exclusively professional instruction, while in the latter a part of the time is given to the general education of the students. The agricultural schools have a three-year course with the exception of Huy, where study lasts but two years. These schools are for farmers' sons who intend to continue in their fathers' vocation; tuition is free, and the State gives scholarships to deserving students, all of whom must have been through the elementary schools. There are eighteen of these schools, and to graduate from one of them a boy must pass a Government examination. A Government official writes: "The greatest service these schools have rendered has been

<sup>a</sup> Agriculture in the Kingdom of Belgium. Ministère de l'Agriculture, 1904.

to raise the agricultural profession to an interesting art which fascinates the learner, and which he never desires to abandon."

In the agricultural sections young farmers may get a general, as well as a professional, education, and the transformation of an agricultural school into a "section" has made many a school more popular and successful. Thirty public and private secondary schools give short courses in agriculture and horticulture at least once a week throughout the year, outlining the theory and practice of agriculture. Doctor True, of the United States Office of Experiment Stations, suggests that this plan might easily be adopted in the rural high schools of the United States, and doubtless it would be of great value. Excursions to the best farms and orchards in the neighborhood are a feature of all the Belgian schools. There are four agricultural sections for girls in the Kingdom, and several high schools of agriculture, with courses of at least two years for girls. For the children of small farmers and gardeners who can not attend one of these secondary schools the State has arranged analogous courses, to be given at most of the rural centers of importance, which may be attended only by graduates of the primary schools. Secondary agricultural education is given at the State reformatory at Ruyssellede. There are four dairy schools for young men in the various provinces, with four-months courses, to provide managers for dairies. There are also ten traveling dairy schools for women, giving four-months courses of a notably high grade. Two hours a day, six days a week, are devoted to theoretical instruction, and three hours daily to practical work. No tuition is charged.

Besides numerous winter classes, there are in Holland six permanent winter schools of agriculture and horticulture, in session from October to April, with a two-years course of study. They are intended for the sons of small farmers and market gardeners, and the course is eminently practical. The fees are about \$5 a year, and may be remitted for poor children. There are also four horticultural schools organized upon the same lines but with a little less theoretical work. The Société de Bienfaisance, in its noted colony for those who otherwise would be paupers or criminals, maintains among other things well-equipped schools of agriculture, horticulture, and forestry, each of which is subsidized by the State.

Finland supports secondary agricultural schools at Mustalia and Kronborg and provision has just been made for a like course to be offered at the University of Helsingfors. The course runs through two years, is both practical and theoretical, and presupposes at least two years of farm work.

The agricultural schools and the high schools of Denmark are so closely connected that in some parts of the country it is difficult,

if not impossible, to distinguish between them. The importance of keeping up to date is constantly urged upon the pupils, and no doubt this largely accounts for the supremacy of the Danes in the markets of England. Only theoretical agriculture is taught in the high schools, but there are numerous agricultural trade schools which have grown largely during the past seven years. Since 1892 the State has granted funds to any people's high school which teaches agriculture and gardening, and many of the schools now receive in consequence about \$2.50 yearly for each agricultural scholar, together with one-third the running expenses of the school, plus a bonus of \$75, but no school may receive more than \$700 annually.

The highest agricultural education provided for by the Swedish Government is that of the two agricultural high schools of Ultuna and Alnarp, at the latter of which dairying and farriery are also taught.<sup>a</sup> Each has a two-years course, and an exceedingly large and well-equipped faculty in comparison with the number of students, which is small. The practical work includes absolutely everything done on a farm, including the operation of a steam engine. Before the final examinations each student must submit to the rector a plan of an estate, carefully platted out, with directions how to manage it, including rotation of crops.

The standard of secondary education in Germany is that which meets the official requirements necessary to avoid two of the three years of compulsory military service. For this purpose Landwirtschaftsschulen have been established, so that the sons of farmers may escape service in the army and at the same time acquire knowledge which may be useful to them afterward in the cultivation of their farms or estates. The languages and mathematics of the Gymnasium are, during the last three years of the course, largely supplanted by the natural sciences and the principles of agriculture. To enter one of these schools, one must present a certificate from a Gymnasium or Realschule of the first rank, showing that he is entitled to enter the third class (*tertia*) of such a school. Every province possesses at least one of these schools; some have more. These schools really correspond about to the lower agricultural schools of Sweden and are in no way comparable with the French schools described earlier in this chapter.

Austria supports a smaller number of these schools than does Germany; the work done is more practical, and they, too, release their graduates from two of the three years of compulsory military service. In addition, there are two special Mittelschulen, one a gardening school, the other a "fruit and vine" school; the former

<sup>a</sup> Sundberg, Gustav. Sweden: its people and industry, 1904. Feilitzen, M. von Kungl. Landbruksstyrelsens Underdåriga Berättelse, 1904.

with a course of three years, the latter of two. A thorough primary education and at least a year's practical work is necessary to enter either.

Turning to Switzerland, the Zurich Polytechnic gives a secondary course in agriculture and another in forestry. There are four "theoretical and practical schools of agriculture," about corresponding to those of Germany and Austria just described. All the theoretical work possible is given during the winter, so as to leave the summer for outdoor work. In addition, winter courses are given for those unable to attend the full course. At Chatelaine there is a school of horticulture, market gardening, and viticulture, which seems to be quite a model; the faculty is large, the course covers three years, and the work done has shown valuable practical results.

There are in Portugal two secondary agricultural schools; the National School of Agriculture at Coimbra, dating back to 1864 and the School for Agricultural Managers at Santarem, founded in 1886.

A secondary agricultural school may be established by any city, town, or village of Japan, when the local finances permit without detriment to the elementary schools of the place, and the Government gives a subsidy to each such school, running for five years.<sup>a</sup> In 1904 there were 57 of these schools, only two of them private, with 7,146 pupils, and the number of such schools is rapidly increasing. The course of study is usually one of three years, but sometimes extends over another year. The number of hours of instruction exclusive of practice must not exceed thirty per week. A preparatory course of two years and a graduate course of the same length may be established when it seems best. The minister of agriculture writes me that the sons of middle-class farmers are now attending these schools largely, as being better suited to their abilities and requirements than are the universities. There are three higher technical schools of agriculture, at Tokyo, Osaka, and Kyoto, which devote their energies to special lines, such as brewing and the making of yeast, cider, wine, and vinegar. The courses are three years in length.

As has already been seen,<sup>b</sup> England is trying to work out in her own way a system of agricultural education fitted to her peculiar conditions. Comparatively few of her people are farmers; still fewer can ever own a foot of land. Up to 1889 only nine county schools had attempted any teaching of agriculture, and the movement to introduce it was fought by the headmasters of the schools.<sup>c</sup>

<sup>a</sup> Secondary education in Japan—Department of Education, Tokyo, 1904

<sup>b</sup> Annual reports, 1901-1905, Board of Agriculture, London

<sup>c</sup> British Royal Commission on Technical Instruction, 1884, vol. 2, pp. 213-217.

At present four counties have local farm schools for their own counties, and most of the colleges and institutes give instruction quite analogous to that called secondary in other countries.

The Department of Agriculture and Technical Instruction for Ireland, as already stated (p. 55), has been engaged since 1900 in planning and putting into operation a system of agricultural education. The most immediate need was a corps of teachers, and accordingly one of its first steps was to provide for a supply of highly trained teachers and specialists by organizing a faculty of agriculture in the Royal College of Science at Dublin, where young men were to be encouraged, by scholarships and a maintenance allowance, to fit themselves for work under the Department; 34 (all scholarship students) have already been so trained, 29 of whom are now employed on the Department's programme, most or all of them as itinerant instructors of agriculture. The course extends over three years, but a four-year course is contemplated. The Albert Agricultural College at Glasnevin, near Dublin, is designed partly to serve as a preparatory school for the Royal College, and partly to educate the sons of well-to-do farmers so as to enable them to manage their own farms, or to become creamery managers, horticultural or poultry experts, stewards, land agents, etc. It has a well-stocked farm of 170 acres. The course extends over one year, the students devoting half of their time to indoor and half to outdoor studies.

Instruction for girls in the domestic economy of the farmhouse is provided at the remodeled Munster Institute at Cork. The course includes dairy work, feeding and management of farm animals, bee and poultry keeping, and household work. Four sessions are held annually, each of about eleven weeks. Accommodations are provided for 50 pupils, but the demand for admission is so great that there are seldom fewer than 200 names on the waiting list.<sup>a</sup>

Special lecture courses in agriculture by qualified men furnished by the agricultural department are given now in practically all the secondary schools of Jamaica and the British West Indies. By means of aid from the department each of the larger and better high schools has been enabled to add a member to its faculty who gives regular instruction in agriculture. Since September, 1900, secondary agricultural schools have been opened at St. Vincent, Dominica, St. Lucia, and St. Kitts. These schools are run on apprenticeship lines. The scholars remain five years and are fitted to become managers of estates. The boys are trained, fed, and clothed free.

Since 1898 the department of education of the Cape of Good Hope has maintained an agricultural school at Stellenbosch, which was already ten years old when it was taken under government control. The boys stay here two years, the work of the first year being quite preparatory. An experiment station has now been established on the

<sup>a</sup> Appendix to the Fourth Report of the Royal Commission on Congestion in Ireland, pp. 181-189.

farm of the school. The agricultural assistant writes me, "a proposal is now on foot to establish a chair of forestry in the South African College, Cape Town, and the subject will be ventilated at the next meeting of the British association."

There are no agricultural high schools in Canada, though in Quebec there are several small farm schools, such as the colleges of St. Anne, Richmond, and L'Assomption. Agriculture is prescribed for all the high schools of Manitoba, and in the Northwest Territories the elementary course is reviewed and expanded in the high schools, while physics, chemistry, botany, and physical geography "must be given an agricultural bearing." In the other Provinces agricultural courses are optional. Prof. J. W. Robertson, administrator of the Macdonald funds, is urging the eventual establishment of an agricultural high school in every county, but not until the elementary schools have been so fitted to the needs of rural life that there shall be a demand for secondary agricultural schools on the part of those prepared to take advantage of them.<sup>a</sup>

As a protest against the secondary education of England Dr. Cecil Reddie opened at Abbotsholme, October 1, 1889, his "New School"<sup>b</sup> now of world-wide fame. The training there obtained is (1) physical and manual, (2) artistic and imaginative, (3) literary and intellectual, and (4) moral and religious. Probably a good part of Doctor Reddie's success is owing to the fact that no one of these divisions has ever been allowed to crowd out, even to the slightest extent, any other one from the attention due to it. Every boy receives some training in the manual arts, especially in the trades upon which man is most dependent. Emphasis is laid upon the rudiments of agriculture and gardening as the essentials of human life and its activities. The boys raise their own vegetables, groom their horses, take care of the cattle, make hay, and learn the elements of the numerous trades and occupations practiced on the better farms. Begun in a modest way, Abbotsholme has been successful, both educationally and financially, and has attracted attention the world over. M. Edmond Demolins took it as the subject of his work on Anglo-Saxon superiority, already mentioned,<sup>c</sup> and France, Germany,<sup>d</sup> and Switzerland now have schools patterned after it and in most cases governed by men who have taught at Abbotsholme. Tentative plans for like schools have been made in Russia, and more than one such plan is now well underway in the United States. Bedales, in England, founded by a former teacher at Abbotsholme, differs from

<sup>a</sup> Report, 1904, Ontario Dairymen's Association, p. 38.

<sup>b</sup> Reddie, Cecil. Abbotsholme, 1900.

<sup>c</sup> Demolins, Edmond. Anglo-Saxon superiority, 1898.

<sup>d</sup> Sanford, D. S. Two foreign schools and their suggestions. New England Magazine, May, 1902.

its parent only in that it receives female pupils as well as male, who live in a separate home near by. This is a unique thing in England, but seems to be a pronounced success. In 1897 Dr. Hermann Leitz, another of Doctor Reddie's teachers, founded a similar school at Ilsenberg, Germany, which has grown so that he now has another for older boys at Haubinds near by, in the Black Forest. L'École des Roches was opened in October, 1899, at Verneuil, France, on a farm of some 60 acres, by M. Demolins and a number of other French sociologists. In none of these continental schools has the everlasting routine of French or German school systems entered, and no one would accuse one of their pupils of lacking originality.

An analogous school, more pronouncedly agricultural, is the "Land-Erziehungsheim" at Glarisegg, near Steckborn, Switzerland, which, though founded only in 1902, in 1903-4 had students from Italy, Switzerland, France, Germany, Hungary, and Roumania. In all these schools the boys and teachers live and work together, devoting, at Glarisegg, for instance, five hours daily to study of the arts and sciences, three hours to work in the garden, fields, workshop, and house, five hours to free play and gymnastics, an hour and a half to meals, and nine and a half hours to sleep. The pupils of these various schools correspond with one another and so have interests unusually broad for children. They learn not only practical agriculture and gardening, but the use of tools is taught them, and they are sent out into the world not only efficient, but resourceful, "fit to rely upon themselves in all emergencies, and quick to fall on their feet after all accidents"—such young men as Cecil Rhodes had in mind for his Oxford scholarships when he provided that "scholarship" should count but 50 points out of 200 in determining the rank of contesting applicants.

In the United States progress in secondary agricultural education is coming more slowly than in the elementary schools, it is true, but the advance is none the less sure. No hard and fast lines can be drawn between the secondary agricultural schools and those above and below; consequently we shall be obliged to consider in this chapter on the one hand those schools offering more or less work that should not be ranked as primary, and, on the other, those whose curriculum will not allow them to be called colleges in the strict sense of the term. Such a category will include the 16 land-grant schools for colored people in the Southern States; for though they are supposed to correspond to the agricultural colleges of the same States, the material equipment is much less, the courses fewer and inferior, and the income is not sufficient to retain experts of so high a grade as will be found in the colleges for whites. Most of these schools offer certain collegiate courses, but only about a third of the student body attain to them, while less than 5 per cent of the

students are in the four-year course leading to the bachelor's degree.<sup>a</sup> The educational problem of the South is a serious one, and the best solution can not be worked out in a day; given the possibility of schools either to train up a few agricultural experts or a large body of practical farmers, but not both, and the present course is without doubt the wiser.

The total number of students enrolled in these secondary schools for the colored race is something over 6,000, to which several hundred more should be added who are students at the Tuskegee Normal and Industrial Institute, which is not a land-grant school, but which gives as good work in agriculture as any of this class of schools, unless it be Hampton. Each of the two latter schools makes elementary agriculture compulsory on all students in their academic courses, Hampton for four years, Tuskegee for two, although a more complete three-years' course is offered. Tuskegee offers a year's graduate work, while Hampton offers three graduate years of work, which is made very practical, though theory is in no sense neglected, and President Frissell urges upon his students the importance of this course above all others. It is here, more than anywhere else in the South, that the ennobling influence of scientific agriculture is taught and emphasized by precept and example. Hampton has brought the state of farming on the peninsula overlooking Hampton Roads to such perfection that it forms an object lesson which is a model to hundreds of students from all parts of the South, the abject poverty of whose homes is due for the most part to the absolute neglect of the first principles of agriculture. Both Tuskegee and Hampton annually hold a short farmers' conference, attended by scores of the more ambitious colored men and women of the surrounding country, many of them traveling comparatively great distances over roads none too good, who tell freely of their successes and failures during the past year, and receive words of advice and encouragement from leaders of their race. Each of these institutions publishes agricultural leaflets which are sent free to applicants, and which seek to help the poor farmer to solve his vital problems in a very definite way. Each summer Hampton gathers together from 400 to 600 colored teachers from all over the South, and gives them not alone instruction in texts and methods, but a vast deal of inspiration. During the past few years each attendant upon these summer courses has been obliged to take either elementary agriculture or nature study. A model farm is maintained by the institute, and the students in the regular agricultural courses learn the practical management of this.

A word as to the results of these southern schools will not be out of place here. Throughout the black belt of the South slavery is still

<sup>a</sup> Crosby, D. J. Agriculture in negro schools. Department of Agriculture, Office of Experiment Stations, 1903, pp. 719, 720.

a vivid recollection, which means that a hatred of "work in the fields" has to be overcome. When school gardening was introduced at Hampton compulsion had to be used with the girls—now they look forward to it with pleasure. Agriculture is demanded of every Hampton student, and every year several times as many young people demand admission as can be accommodated. In almost every State of the South Hampton graduates are conducting small industrial schools, none other so well known as the large one at Tuskegee, but each forming a center of progress for the negroes. During the last twenty-five years more than 70 per cent of the negro farmers of the 33 counties of tide-water Virginia have come to own and manage their own land. These schools have been sending out missionaries to preach the gospel of work, of landowning, and of scientific agriculture. I know of a colored man who worked his way through one of these schools by studying nights while he labored all day in a sawmill. After he went back to his former home to teach, he induced his scholars to help him build a larger and better school-house; he built his own home on land which he managed to buy; he taught the people around him—almost all of them renters how to farm and make money, and helped them to buy land and make homes. To-day there is not a saloon in his county, over 90 per cent of the negro farmers own and manage their own land, and for more than five years not a negro from this county has gone to the penitentiary. His case is a notable one, but not exceptional. The negroes of the black belt of Florida, according to the report of the State superintendent of schools, now not only maintain all their own schools but pay some \$5,000 annually to the support of the white schools of these counties.

In this connection should be mentioned the Chilocco Agricultural School, in Oklahoma, an outgrowth of the Indian school at that place. An immense farm of 8,600 acres is being transformed into the "great agricultural school of the Indian Service," and here hundreds of Indian boys and girls from other elementary Indian schools can be accommodated and taught scientific farming. This is a practical outgrowth of the introduction of agricultural instruction into all the Indian schools, and is an excellent commendation of the plan. Only a limited number of Indians can be received at Hampton each year, many of whom learn some other industry than farming. Chilocco will henceforth be the principal means of educating leaders among the Indians in that most necessary art for them agriculture.

Secondary schools of agriculture are now maintained in connection with the agricultural colleges of Idaho, Louisiana, Maine, Minnesota, Montana, Nebraska, Rhode Island, Texas, and Washington. Minnesota in 1893 established the first of these schools, offering a three-years course for the purpose of "training the students to become good

citizens, good farmers, and good housewives." No tuition is charged, and the school has proved an unqualified success. At present upward of 500 students are taking the regular course, while over 150 more annually attend the short course for farmers and the dairy school. The university has found that a larger percentage of these students go back to the farm than mean to when they enter the school, so favorable to farm life is the atmosphere in which they live for three years. The last session of the Minnesota legislature established another secondary agricultural school, at Crookston, but it is not in operation yet. The school of agriculture of the University of Nebraska, established about 1898, has essentially the same courses as the one just described, except that it lacks work in domestic science, which, however, is to be added in 1907. Washington maintains a three-years course, while the secondary work in Maine and Rhode Island covers but two years. A few of the other State agricultural colleges, Illinois, for example, accept students coming directly from the elementary schools, but do not differentiate a secondary course, although there seems now to be a tendency to do so. The Connecticut agricultural college offers a special group of courses to pupils coming from the common schools, and the New Mexico agricultural college teaches agriculture in the preparatory department which it maintains. The differentiation of the secondary courses is a hopeful sign of a definite intention to prepare not only experts, but also a corps of excellent farmers who shall be thoroughly grounded in the science which underlies their profession; and, as well, of the establishment in all of our States, eventually, of separate secondary agricultural schools.

Agricultural high schools, supported in part at least by the State, are in successful operation in Wisconsin, Alabama, and California. In 1902 the first two of four county agricultural high schools were opened at Menomonie and Wausau, Wis., the State paying a substantial share of the first cost, and afterwards "a sum not to exceed half of the amount actually expended in such school." In connection with the Dunn County school, at Menomonie, is a county training school for rural teachers which gives the county a body of teachers well trained in agriculture. Various magazines have given prominence to these schools, and the town of Menomonie has grown materially by reason of people from many parts of the country moving there to give their children an education in agriculture, manual training, and domestic science. The course of study covers two years, and short winter courses for farmers are given annually. The farmers themselves have shown such a lively appreciation of these schools that the legislature has established two more in other parts of the State. Each year sees a larger number of the country boys and girls attending a higher school after leaving the rural school.

In Dunn County the annual teachers' institute is now made a part of the agricultural summer school, and the teachers are given special instruction in agriculture, manual training, and domestic economy, instead of reviewing the common branches over and over again. Indeed, these subjects are making their way into many of the rural schools of the county; books and bulletins on agriculture are furnished the schools free; school buildings and ventilation systems are planned without expense, as are school grounds and gardens; school apparatus is planned and prepared at actual cost. To operate one of these schools costs the farmer 20 cents on each \$1,000 of his assessment, and besides teaching his children for him without tuition, the members of the faculty attend local farmers' institutes, speaking and giving stereopticon lectures; they select pure-bred stock for buyers, furnish bulletins on farm subjects, and furnish plans and blueprints of good roads, barns, silos, poultry and milk houses, water and ventilation systems for houses and barns, and land drainage and sewerage systems for barns and houses; they test clover and other legumes for bacteria, test farm and garden seeds, test milk and cream for butter fat, treat oats for smut and potatoes for scab, and graft apple trees when the scions are furnished.

In 1896 the legislature of Alabama established an agricultural school in each Congressional district of the State, in which, though some elementary school work is done, agriculture is taught in the seventh to tenth grades, inclusive. Simple experiments in farm management, animal industry, and horticulture are carried on by the students of both sexes upon the school farm. Until within two years these schools were practically under local control, consequently their development agriculturally was slow and far from uniform; but now they are regularly inspected by the State commissioner of agriculture, and the board of control has taken steps to make them more efficient. Over 2,000 boys and girls attend these schools annually, and a larger proportion of them are doing definite work in agriculture now than ever before. Assistant Secretary of Agriculture Hays during the summer of 1906 inspected these institutions and commended them highly. The closer relation felt with the Department at Washington is reflected in the attitude of the Alabama farmers toward the schools this year.

The most recent progress in the organization of a State system of secondary agricultural education is to be seen in Georgia. A law was enacted during the summer of 1906 providing for the establishment of a secondary school of agriculture in each of the 11 Congressional districts of the State, the schools to be branches of the State College of Agriculture. The annual income of each of these new schools is estimated at \$6,000, but the locality securing a school must furnish not less than 200 acres of land, and necessary equip-

ment in the way of buildings, live stock, machinery, farm implements, etc. The localities bidding for these institutions have given evidence of their genuine interest in the movement by donating to the State 2,744 acres of land, worth about \$132,500, cash for buildings amounting to \$440,000, and various other things, bringing the value of gifts from private sources up to approximately \$800,000. Nine separate buildings are contemplated for each school. The course of study will cover four years, including one year of elementary school work, and will prepare graduates for entrance to the State College of Agriculture. At least three hours daily will be given to class work, and three hours or more to farm, home, shop, or laboratory work. Complete courses in domestic science and economy will be provided for girls, and as many short courses as possible for adult farmers.

Michigan established in 1903 ten county normal training schools for rural teachers, in which instruction in elementary agriculture is given during the spring only, so that it really amounts to work in school gardening and to becoming familiar with the better textbooks on agriculture. The three State normal schools of Missouri give each year a good course in agriculture, two of them devoting five periods a week through the entire year to it. The California Polytechnic School, at San Luis Obispo, a State institution established January 1, 1902, offers secondary courses in agriculture, domestic science, and mechanics, covering a period of three years. Three large buildings have been erected on a farm of 280 acres, and the agricultural course is made the leading one.

Only one class of secondary schools remains to be considered, viz., private agricultural schools maintained without State aid, the number of which is growing larger every year. Some of the best of these schools are fostered by religious sects. The Youth's Directory, of San Francisco, a Roman Catholic organization for the rescuing of destitute boys, in 1902 opened a secondary school, the St. Joseph's Agricultural Institute. On a ranch of 1,000 acres in Napa County the boys are taught to care for vineyards, orchards, stock, and dairies, and have instruction in certain secondary branches as well. The Mount Hermon School, near Northfield, Mass., founded by D. L. Moody, a secondary school of some 900 students, has blazed the way for other such schools to follow by offering ten terms, of sixteen weeks each, in agriculture, horticulture, landscape gardening and forestry, animal industry, and dairying, although the school is in no sense a technical institution, and has before prepared only for college. On the farm of 1,000 acres are some 200 cows and a quantity of pure-bred horses, sheep, and swine. There is a forest of over 3,000 acres, managed under the advice of the United States Forest Service. Large orchards furnish fruit for a cannery on the grounds of the school. The various courses are elective, and within a year of their

foundation they were being taken by more than 8 per cent of the students.

One of the best of the secondary agricultural schools is the National Farm School, at Doylestown, Pa., although it is at present able to accommodate only about 40 boys. An excellent faculty, at the head of which is a former president of one of our better agricultural colleges, gives courses covering four years. Boys from any State are accepted as students, and they need not be of any particular creed, although the school is primarily for young Jews and is almost exclusively composed of them. The children of Abraham, though tillers of the soil during their early history, have for centuries in some of the older countries been denied the right to own land, and are more universally dwellers in cities to-day than any other race. Most students in other agricultural schools have lived more or less on a farm—these lads without exception come from the larger cities. But the science and practice of agriculture are taught them so thoroughly that the graduates have all been successful farm managers or have demonstrated their skill in analogous lines. Several of them have entered the service of the Department of Agriculture at Washington; and are doing work in experimental lines. The Baron De Hirsch Agricultural School, of Woodbine, N. J., opened in 1894, is doing somewhat similar work though in a less pretentious way.

There are other and newer ventures in this field, such as the Winona Agricultural and Technical Institute, at Winona Lake, Ind., founded in 1902. A year's work in agriculture is given in the preparatory department, and four years of secondary work in agriculture follow. All students are required to work about fifteen hours per week, for which they are paid \$1.25. Union Academy, of Belleville, N. Y., in 1903 offered a four-years course in agriculture, taught by Professor Carrier, formerly of the Elyria, Ohio, High School. The Girls' Industrial College, of Denton, Tex., opened in September, 1903, gives instruction in horticulture, floriculture, truck and berry growing, dairying, bee culture, and poultry raising. The Briarcliff Manor School, of New York, taught practical agriculture and horticulture for several years. By the time its first class had finished its two-years course, the demand for admission to such work was so great that efforts were made to provide more extensive facilities, but as the necessary financial support was not forthcoming the school was discontinued.

Wellesley College now offers a year's course in horticulture and landscape gardening. Simmons College announces work covering three or four years in theoretical and practical horticulture, for women. The last year or two were to be spent at the Amherst Agricultural College, but this plan has been abandoned. At Groton, Mass., there is the Lowthorpe School of Landscape Gardening

and Horticulture for Women, with a two-years course given by a faculty of six members. There is also a year's course for gardeners. Tuition is \$100 per year, but "if students can not afford to pay, their tuition and living expenses are given them." The Hartford School of Horticulture, like Lowthorpe, is a private school, but is better known than most of its kind, owing to the number of skilled gardeners it has graduated. At present a large part of its work is in training Hartford children in horticulture and in giving summer courses to teachers.

The introduction of agriculture into the public high schools as a branch of study is no longer a rare occurrence, as it was only two or three years ago. There are now at least 200 high schools in Missouri offering courses in agriculture, 30 in Ohio, and one or more in 21 other States. Agriculture is to be taught in each of the 150 new high schools soon to be opened in Virginia under the authority of the State superintendent of education. A new agricultural high school has been established at Calvert, Md. An elective course in agriculture is offered in the public high school of St. Louis, Mich., as has been done at Elyria, Ohio, for some time. Perhaps this latter one is the largest city school in which agriculture proper is taught. In the same State there are 190 township high schools, quite a large number of which teach elementary agriculture, but the exact number is not available. The Ohio law permits the teaching of agriculture in any elementary or high school, and as more and more of the rural schools become consolidated a year or more of secondary school work is done, agriculture often being included. The University of Illinois is doing all in its power "to hasten the consolidation of country schools and to place in these schools courses of agriculture." The school at Seward, Ill., is the only one at present, so far as could be learned, which fulfills this ideal. The Missouri State board of agriculture is now urging the establishment of county or district agricultural high schools throughout the State and is taking active steps to bring about that end.

We have seen something of the progress of secondary education in agriculture during the past decade. It may be considered certain that the movement now under way will make still more rapid strides in the near future, but whether it will be through the medium of large State secondary schools, such as that of Minnesota at St. Anthony Park, or of scattered agricultural high schools of a more local nature, as in Wisconsin, Alabama, Georgia, and California, or of the introduction of agriculture in the public high schools of the country, can not now be determined. Each of these ideals has its advocates, and each its opponents. Minnesota has made its school of agriculture an unqualified success, but Oklahoma changed its preparatory course into a "twenty-weeks course in agriculture" because so many of the

students took the preparatory course just "to say they were going to college." President Northrup, of the University of Minnesota, says, "Our school of agriculture stands in the minds of our agricultural classes for the whole university and the college;" and President Jesse, of the University of Missouri, objects to it just for that reason—"it is a screen between the people and the college and university." Each believes in making the entrance requirements of the agricultural college equal to those of other colleges; the former, however, would at once supply the deficiency in our school system by establishing a first-class agricultural high school to prepare boys and girls for the entrance examination, while the latter would require the public high schools to prepare for the agricultural college requirements, and so "make the high school agricultural as far as it ought to be agricultural. It is the long way, the slow way, the toilsome way, but I believe it is finally the right way." Doctor Jesse has done a similar work for the classical high schools of Missouri, in twelve years raising the number preparing for college from 5 to 125, and by raising the requirements for admission into the college of agriculture he has more than doubled the number of students.

It seems to me that the second of the three classes of schools mentioned—such as the county agricultural high schools of Wisconsin—is greatly to be desired, at least so long as it is not practicable to introduce agriculture into all of our secondary schools. Those already in existence are doing a great work in giving an education, and a good one, to scores of young men and women who otherwise would settle down to the routine of farm life with no instruction save that of the common school. If schools of this class are to be successful, however, they must have the services of teachers so well fitted as to command the respect and support of the residents of the community from which they draw their scholars, and this can not be gained and maintained by excellent school work alone. It will be necessary to reach the farmers directly, to make them feel that the agricultural high school is their school, and that its teachers are willing and able to cope with economic situations troublesome or overburdensome to them. This has been done in Wisconsin, and is more and more the condition in Alabama, as the schools are being put on a better basis.

Serious objections have been raised in several States to the plan of smaller agricultural high schools at different points in the State, because of a belief that the existing system of public schools should not be paralleled by schools more or less technical—that "it is wrong to set agricultural instruction off by itself and to make it only a class subject." The introduction of agriculture into the elementary schools of a number of States is a step toward overcoming this, for it thus becomes a study on the same plane with all the others, and

not merely a technical or occupational subject. Probably in time agriculture will become a common feature of our educational system. This done, two solutions of the problem of providing for those who can not attend large secondary schools of agriculture are possible—its introduction into all the public high schools or the practical abolishment of entrance requirements in the agricultural college. Until the former is feasible, which certainly is not the case at present, there seems to be no good reason why the latter course should not be followed. This would not mean in the least the lowering of the standard for a degree, or better, for graduation. Happily, there is an instance in point to serve us as an example. Just as Missouri doubled her number of students by raising her entrance requirements, Illinois in six years increased her attendance from 20 to 340 by providing a large faculty, competent in every way, and by then saying to the farmer boys of the State: "Come to the university as you are and choose the subjects you wish to study. We teach about 80 agricultural subjects; elect what you feel you need, and we'll do the best we can to teach them to you. Of course, if you choose certain subjects, you must take certain others with them, because they belong together." And the boys go to the college, often without very much thought about a degree, but rather to learn those things they have found they need to make them successful farmers. Aside from what they do in the way of short courses, most of the other agricultural colleges aim to produce agricultural experts and leaders almost exclusively. Illinois does this to a marked degree, but furnishes the facilities as well for the young farmer who desires to become proficient in his chosen life work. There are, then, instances where opposite methods have been efficacious toward increasing the usefulness to the State of its agricultural college. But either probably would have failed had it been undertaken in a half-hearted way, as may be seen in certain other such institutions. Either the requirements for admission must be kept high or else the work offered to applicants must be so thorough that it will be far from play, and so not be sought by young people who merely wish to say they "are going to college."

There is one other alternative, viz., the inclusion of agriculture in the high school curriculum. This is not visionary, as is proved by the few schools such as that of Elyria, Ohio, where it is successfully taught, and by the large number of consolidated schools where it is taught in what secondary courses are given. The most serious obstacle at present in the way of efficient secondary agricultural courses is the lack of suitable instructors. They should certainly be graduates of agricultural colleges, which would necessitate training courses in the latter institutions. There are few suitable textbooks to-day, but these will come with the demand for them. □

has not been so very many years since our high schools had little more than one classical course. Manual training has been the iconoclast which has destroyed this old fetish, and we may reasonably suppose that as soon as our educators and taxpayers are brought to see the advantages inherent in high school courses in agriculture, their introduction will follow. For generations we have been supplying an education suited to the wants of those who wished to continue their classical studies. During the last decade we have offered to those who will spend their days working in the city with their hands a preparation for their life work, but the farmer still remains to be considered, although he represents about half of our population.

The introduction of agriculture into our public high schools would not mean that the instruction must necessarily be very technical—the agricultural colleges fulfill that mission. It would not mean that branches of general culture value would be neglected; the men and women on our farms need to be made good citizens and home-makers as much as do any other class of people. But it would mean that the boys and girls would learn the real advantages of country life, the sources of information concerning recent progress in agricultural practice, and how to take advantage of the knowledge thus gained, and most of all, they would learn the relation of science to agriculture. No one longer questions the educational value of manual training; a good course in agriculture would present at least as great advantages, either as an elective course in city schools or as a part of the regular curriculum in village high schools. Chemistry, botany, and zoology, each given from a dynamic standpoint, in its agricultural bearing, could easily be taught in the first two years of the course, and agronomy, zootechny, and dairying in the last two, leaving ample time for English, algebra, geometry, history, one language, and physics, or some other elective. The prosperity of all country sections is directly dependent upon agriculture, and yet no facilities are provided for teaching the youth the sciences upon which its practice is based. And it is equally true that the prosperity of our cities is based quite as much upon the success of agriculture in their surrounding territories as upon the technical development of their commercial enterprises. For example, the redevelopment of the abandoned farms of New England, possible only through the most scientific handling of them, is of most vital importance to the urban population. It remains, then, for those interested in the development of agriculture to use every means possible to urge upon the people as a whole the need of providing suitable means for the education of the rural masses, toward the end that they may become at once better producers and better citizens.

The committee on methods of teaching agriculture of the Association of American Agricultural Colleges and Experiment Stations made their seventh report at Atlanta, Ga., in 1902, on the question of "secondary courses in agriculture," and among other things presented the present programmes of the high schools of Indiana, of Lowell, Mass., Des Moines, Iowa, and Washington, D. C., in each case showing, in a parallel column, a suggested agricultural course which might easily be given in such a school by a competent teacher. This report has been published<sup>a</sup> and should be consulted by anyone interested in working out such a course of study, as should other publications referred to in the bibliography at the end of this bulletin, especially No. 95, pages 79-91; No. 99, pages 481-500, and No. 25, pages 50-97. In the last publication referred to (No. 25) are given in full the courses of study of the Wisconsin and Minnesota agricultural high schools, with descriptive paragraphs about each study, together with an "Industrial course in the consolidated rural school, the agricultural high school, and the agricultural college, articulated into a unified scheme," by Prof. W. M. Hays, now Assistant Secretary of Agriculture, so planned that pupils may be transferred from country to city school, or vice versa, up to the end of the second high school year, without great loss.

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<sup>a</sup>Secondary courses in agriculture. Seventh report, committee on methods of teaching agriculture, Association American Agricultural Colleges and Experiment Stations, 1903. Department of Agriculture, Office of Experiment Stations, circular 49.

## CHAPTER V.

### AGRICULTURAL COLLEGES.

France provides for a higher education in agriculture as liberally as she does for more elementary instruction in this branch. The Institut National Agronomique, in Paris, is the culminating point of this system. Entrance is obtained only by open competition, in which foreigners have the same status as French citizens. Only those receiving 70 per cent of the total number of points possible during the two years of the course have the title of "agricultural engineer" conferred upon them; those receiving not less than 65 per cent are awarded a certificate. The tuition fee is \$100 per year; there are 65 members of the school staff, and great emphasis is laid on theory and science. Each student must pass at least two months of the three months' vacation on a farm, where he must make extensive notes on everything of agricultural interest in the neighborhood, and work up answers to an examination paper which he receives when leaving the institute for his vacation. Graduates are supposed to be experts in one or more branches of agriculture; many of them become chemists or directors of factories devoted to agricultural interests, directors of agricultural stations, or professors in some of the various agricultural schools of the Republic. The Institut Agricole, at Beauvais, maintained by the Brothers of the Christian Schools, is well above any of the French secondary agricultural schools, but not of so high a rank as the Institut Agronomique. The tuition fee is high—\$320 annually for regular courses, and \$200 for preparatory courses, besides extra fees for modern languages and other almost necessary courses. But the three years' instruction is quite thorough, and the practical work done is to illustrate, so far as possible, what is studied at the time. The students spend three afternoons each week working on the Ferme du Bois, belonging to the school.

Since the establishment of the 15 State universities under the law of 1896, the advantages of this decentralizing measure are plainly seen in the efforts to grapple with the agricultural problems of greatest importance to the several Departments in which the universities are located. Some of these universities are now doing more work along lines of agriculture, horticulture, sericulture, etc., than in any other one direction, so that they seem quite comparable with the better of our own State agricultural colleges, where one may take

work in the liberal arts if he wishes. Clermont has established a limnologic laboratory in the midst of her 20 lakes; Besançon, laboratories for agricultural analysis and bacteriology, and two experiment stations; Bordeaux, laboratories for research into diseases of the grape, an experiment station, an agronomic and an œnologic institute; Nancy, an institute for brewing, and a fine section for the study of agriculture and forestry; Lyon, a school of tannery perhaps as excellent as any in the world; while at Caen special attention is devoted to the manufacture of butter and cheese. The happy thing about all this is that it has given education a hold on the commercial and agricultural life of the country as nothing before it has done. Corporations, societies, and interested individuals have given large sums of money to the universities for the use of these sections, and have been given representation on the governing boards of the institutions. The General Syndicate of the Industry of Hides and Leathers created and largely supports the school of tannery at Lyon; this has turned out so well and has attracted such favorable attention that the university is planning for the creation of an agronomic institute to be as fine and extensive as any in the world, and this plan has the moral and financial support of the large agricultural interests of southern France. These State universities have, in the past few years, all allied themselves with the farmers' societies, and are doing excellent work among the rural inhabitants, preparing the way for an intellectual awakening among the common people, as a new respect for education and culture is given them.

The size of the country being considered, it is Belgium to which we must turn for our model in higher agricultural education. In an area smaller than that of Massachusetts and Connecticut there are three institutions of university grade for scientific and technical training in agriculture and allied branches, if one include the school of veterinary medicine at Cureghem, which has the same entrance requirements as has the medical school of the university and has had them since 1888, when a law was passed "placing the instruction in veterinary medicine on the same level as that of human medicine." One must study a year and a half for the diploma of "veterinary candidacieship," and two years longer for the degree of "veterinary surgeon." The State agricultural institute at Gembloux is the most important of these three schools, and is one of the best in Europe, though not so advanced as the French Institut Agronomique. Its farm of 160 acres, containing fields and gardens for experiment and demonstration in agriculture, horticulture, and forestry, is made to yield an annual profit, usually of more than \$2,000; while few, if any, of the other such institutions of Europe make their farms pay the running expenses. All instruction is given in French, and at the end of three years of successful study the

diploma of "agricultural engineer" is given, which since 1876 has been a necessary qualification for those who desire to be employed in controlling the forests, drainage, and irrigation of the country. One must be familiar with all phases of actual farming before entering Gembloux, for the school is not regarded as a place to teach practical work but rather as one in which "to train future leaders in agricultural progress in Belgium." During the last year of the course a trip of ten days is taken in June to some of the more important farms in Belgium, Holland, the north of France, Normandy, Luxemburg, or the Rhine provinces, upon which reports and essays must be written. Two years of forestry are included in the regular agricultural course, with another elective year. One may do a year's graduate work in either woods and forests, agronomy, or chemical and agricultural industries. Since 1900 there have been also a dairy institute and a chemical and bacteriological institute. The standing of Gembloux may be seen from the fact that in 1904 42 per cent of the pupils were foreigners, coming from 26 countries of Europe, Asia, Africa, North and South America, and the East Indies. In 1901 the Peruvian Government asked the institution to send them agricultural engineers to organize superior agricultural instruction in Peru.

The Catholic University of Louvain has practically the same course of study as Gembloux, the same number of teachers, and in addition gives courses in philosophy, religion, and history. In connection there is operated the Heverlé Institute, which is a dairy school with a farm of 180 acres, used mostly for experimental grounds. There is also maintained a high school of brewery, and graduate courses of a year each are offered in agricultural science, chemistry, and industry, forestry, and colonial agriculture. Louvain is maintained at its present high standard "in order that young Catholics may receive as good an education here as elsewhere, without coming under Protestant influence."

The State Veterinary School of the Netherlands at Utrecht is very like the better ones of other European countries. It has a four-year course, and about half the time is given to practical work. As far back as 1884, since which time there has been improvement, a British blue book stated that "this school leaves nothing to be desired as a place for teaching the principles and practice of veterinary medicine and surgery." The agricultural college at Wageningen, however, stands at the head of Holland's system of agricultural education. It comprises four schools: (1) A higher burgher school with a course of four years, providing a basis for an advanced agricultural education. (2) An intermediate agricultural school, for those youths not able to take the full college course, and for sons of small proprietors or tenant farmers who want a certain amount of theo-

retical knowledge. There is in this school a year of graduate work, for those intending to spend their lives in the Dutch Indies. (3) The horticultural school with a course of two years, for practical gardeners, and an additional course of the same length for those who desire more scientific instruction. (4) The higher school of agriculture and forestry, divided into one section for home, and another for colonial, agriculture. The instruction given is essentially theoretical, although some hours of each Wednesday and Saturday are devoted to practical work, and excursions are made weekly "for purposes of demonstration." There are extensive experiment and demonstration plats, and a small farm used mainly to illustrate the class lessons.

The Royal Veterinary School of Denmark at Copenhagen was changed in 1856 to the Royal Agricultural and Veterinary Academy by the addition of a complete course of instruction in agriculture. Attendance of native born at lectures is absolutely free, and one can take advantage of them without any obligation to take examinations or even to enroll as a student. Many sons of peasants manage to attend the academy, probably a larger proportion than elsewhere in Europe. A large experimental laboratory devotes special attention to problems of dairying, especially to that of comparative feeding of milk cows.<sup>a</sup> There are usually about 350 students here, between 80 and 100 of them from other countries, especially from Finland and Schleswig.

Ever since the foundation of the first higher agricultural school at Möglin in 1806, Prussia has led the States of Germany in providing for the study of agriculture. At present there are in Prussia five agricultural institutes in connection with royal universities, the Royal Agricultural Academy at Bonn-Poppelsdorf, two royal academies of forestry, and two veterinary institutions which really ought to be considered secondary. These, with the independent agricultural academies of Hohenheim, in Wurtemberg, and Weihenstephen, in Bavaria, are the only agricultural institutions in Germany exclusively devoted to higher instruction in agriculture. Practically all of their students belong to the higher classes, and their object is to become efficient occupiers of their own land, large tenant farmers, managers of estates, or teachers of agriculture. The main course is usually one of two years, but the Government makes compulsory a three-years course for all who intend to teach. Most of these schools have large museums of agricultural implements. The Hohenheim

<sup>a</sup> Agricultural experiment stations in foreign countries. Department of Agriculture, Office of Experiment Stations, bulletin 112, pp. 1-6 Kennedy, W. J. Dairy methods in Great Britain, Ireland, Denmark, Holland, Channel Islands, Austria-Hungary, Germany, and Switzerland Department of Agriculture, Bureau of Animal Industry, circular 76, 1905.

Academy operates a sugar factory, brewery, distillery, a vinegar and liquor factory, etc.

Portugal maintains the Instituto de Agronomia e Veterinaria at Lisbon, which gives four-years courses leading to the degrees of engineer of agriculture and of forestry, and also a four-years course in veterinary medicine. The students are often taken on trips to different parts of Portugal, and thus familiarized with the different methods of cultivation and cropping in vogue. The minister of public works writes me that this school has produced splendid results in promoting the prosperity of the country at large, and of the farming classes in particular.

There are in Japan three higher schools of agriculture, all of which rank up well with the best of our American institutions.<sup>a</sup> The Sapporo Agricultural School, founded in 1872 and reorganized in 1877 on the plan of the Massachusetts Agricultural College at Amherst, offers a preparatory course of two years, a collegiate course of four years, and special courses of three years each in forestry, civil engineering, and agriculture, this latter being more theoretical than the four-years course in agriculture. The College of Agriculture and Dendrology was incorporated with the Tokyo Imperial University in 1890, and includes a botanical garden, seismological observatory, marine biological station, a large forest for practice, several experimental farms, an orchard, veterinary hospitals, and a laboratory for forest technology, together with buildings for the study of sericulture. There are courses of study, each three years in extent, in agriculture, agricultural chemistry, forestry, and veterinary medicine, and a special course of one year for teachers in the supplementary agricultural schools already described. The school at Morioka was founded in 1903 to give a higher education in agriculture, forestry, and veterinary medicine to the inhabitants of the northern province of the Empire, where agriculture, horse breeding, etc., are the principal occupations. Each of the regular courses extends over three years. There is a general shorter course of two years, and a graduate course of two years.

The Royal Agricultural College at Cirencester was the first such institution in England. Chartered in 1845, supposedly for the purpose of educating farmers' sons, it did little more than to prepare for the examinations of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, while the tuition alone was \$375, which, with living expenses, made the school impossible to any except young men of wealth who had in view land agency or colonial life. The college of agriculture at Downton, founded in May, 1880, with nearly as high fees as the royal college, prepared for the same examinations, and stated in its catalogues that "it is not

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. <sup>a</sup> Technical education in Japan. Department of Education, Tokyo, 1904.

the intention here to educate farmers' sons (unless wealthy) or farm bailiffs." A chair of agriculture was founded in the University of Edinburgh in 1790 and is still in existence. There is given here a one-year course in two parts, the first in the principles of agriculture, the second in agricultural practice. There are veterinary colleges in London, Edinburgh, and Glasgow, each giving three years of instruction.

In 1888-89 Parliament set aside £5,000 to be given to such institutions teaching agriculture and dairying as should measure up to a certain standard, but there were not enough qualified recipients to claim nearly all of the fund, and in the following year only about half of it was used by the 13 bodies which were qualified. In 1904-5 the grants amounted to £10,300. There were at the time of the last report (1905) ten colleges, three dairy institutes, an agricultural and horticultural school, a farm school, and the National Fruit and Cider Institute. Some of these institutions are almost wholly supported by individual counties from their own funds, for the local taxation act of 1890 placed at the direct disposal of the different county councils large sums of money, now annually available for instruction in agriculture and other technical industries. In most cases, however, the local authorities maintain village lectures, local demonstration plots, dairy and special teaching by means of migratory classes, and the state board of agriculture gives from its limited funds toward the support of the higher institutions. Through work done in certain of these colleges, one may now take the bachelor's degree in science in the University of Wales, Victoria University, University of Durham, Cambridge, or London University. Some of the institutions not affiliated with any university, such as Holmes Hall, for instance, give fully as long and thorough courses. Almost all of these schools provide courses of from four to ten weeks for such persons as are obliged to spend the rest of the year at work. All have short courses in practical dairying, and graduate courses for those who wish to teach the subject. During the last year or so more attention has been given to the training of teachers for elementary school work, and the attendance of teachers upon the short courses has been gratifying. Several of the colleges give winter courses for those who care for more thorough and theoretical instruction than is given in the shorter courses. Several traveling dairy schools are maintained by some of the colleges, and members of their faculties often give two or three lectures at some center near by. In the regular academic course comparatively little real agricultural instruction is given. In some of the schools giving a three years' course there is no agricultural instruction during the first two years, but rather thorough work in the sciences, often Greek and Latin holding a prominent place as well. In most of the two years' courses, no agriculture is taught during the first year. In short, the college work ranks up in no way with that of any other European

country we have studied; but the extra-academic efforts so abundantly put forth seem admirably suited to the needs of the people.

The government of Natal has provided a school of agriculture at Cedara, with a "two years' practical course" which is intended to be considered as of a collegiate grade. Natal is also preparing to offer to the farmers of South Africa a "farmers' reading course," to be given under the supervision of Prof. William Brooks, director of the Massachusetts Experiment Station.

The School of Agriculture opened at Colombo, Ceylon, in 1884, had in 1900 ten branch institutions, and a dairy institute in Colombo which is filling an important place in the welfare of the island, as well as a school of forestry with a two years' course which is very practical and popular. Besides the college work done, the school sends out agricultural instructors into remote rural districts to illustrate methods.<sup>a</sup>

In India several of the government farms have their agricultural experts give instruction of a higher grade to their apprentices. A course of lectures on agriculture is given annually in the Poona College of Science, and there is an agricultural course in Baroda College, Bombay. In Madras the Saidapet Agricultural College has been doing good work for a number of years. India this year (1907) opened her new Imperial Agricultural College at Pusa, on a government estate of 1,358 acres, and the buildings already in progress will cost considerably over a half million dollars. The staff will be composed of a carefully selected body of European specialists, with native assistants. It is further proposed to locate an agricultural college in each important province, with a course of technical training extending over three years.

New Zealand has an agricultural college at Lincoln, which is one of the affiliated colleges of the University of New Zealand. A student for the degree of B. S. studies two years at the university college and two years more at the college of agriculture. In 1900 instructors from Canada were procured by the State, and a dairy school was established as a department of the college. Free agricultural bulletins are furnished the farmers, and traveling instructors in dairy, fruit, and poultry farming teach in various centers the year around.

Turning to Australia, we find higher agricultural education in a flourishing state. Victoria, which prescribes agriculture in the elementary schools, leads as well in collegiate work. Besides the Dookie Agricultural College and the Burnley Horticultural School, each very excellent, the secretary for agriculture writes me that a degree in agriculture has just been arranged for by the Melbourne University, one of the requirements for which is "a year in practical

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<sup>a</sup> Wallace, R. H. Agricultural education in the British colonies. Journal Society of Arts, vol. 48, p. 338.

work, spent to the satisfaction of the principal of the Dookie College." Besides lectures from time to time at various centers by experts, the colleges hold short courses in various places in the State instead of at their institutions. The Queensland Agricultural College has a course of three years of forty-two weeks each, and does special work in forestry because of its local importance, making use of some 1,000 acres of virgin forest close by the school for experiment and demonstration. The students of the Rosewater Agricultural College of South Australia pay special attention to viticulture, which is as important to them as is forestry to Queensland. Each student devotes half of every day of his three years here to practical work. For some years more young men than could be accommodated have applied for admission to the Hawksworth Agricultural College of New South Wales, and when the announcement was made that for the session beginning in January, 1905, there would be room for fifty more students, there was again a waiting list more than eight weeks before the school opened. The course here is but two years in extent and is very practical. Much is made of excursions to the better farms, piggeries, and dairies of the State. Too much can hardly be said of the way in which Australia has accomplished the subjugation of a new and wild country; each State is considering the needs and problems of its own people and meeting them as best it may.

The Government of Mexico supports the National School of Agriculture, which should perhaps rank among the higher schools, and in which are studied courses leading to the degrees of engineer of agronomy, agricultural expert, and veterinary surgeon. The department of agriculture subsidizes three establishments whose functions approximate those of our experiment stations.

Until recently the Ontario Agricultural College at Guelph was the only Canadian institution giving higher instruction in agriculture, the Nova Scotia School of Agriculture, at Truro, and the School of Horticulture, at Wolfville, ranking rather as secondary schools. But during 1904-5 these two latter schools were merged, a larger and better faculty employed, the grade of instruction raised, and Nova Scotia now has an agricultural college of the first grade and has taken an important step in advance of the times by affiliating it with her provincial normal school in the same town. The young men of the normal school attend the short courses given in agronomy, horticulture, judging of beef, dairy cattle, and horses, and both sexes take the short course in dairying. The committee of five of the National Educational Association reported<sup>a</sup> that "in each country

<sup>a</sup> Industrial education in schools for rural communities Report committee of five, N. E. A., 1905, p. 25

where the experiment of teaching agriculture in the elementary schools has failed the authorities have reported that the chief reason was the failure to secure teachers properly prepared to teach the subject." In Nova Scotia the schools are being supplied in the beginning with technically trained teachers.

Manitoba is at present establishing an agricultural college, but as yet the plans are not definite enough to say much about them. Exactly the opposite is true of Guelph, now in its thirty-second year, which is known in the United States almost as favorably as in Canada. During its early history it was obliged to struggle against great prejudice among the farmers themselves—a prejudice which has proved of value, for through the effort to win over the agriculturists one by one they have at last been made to feel that Guelph stands to them in a personal relation, and it is doubtful if the people of any one of our States know as much about their own agricultural college or take a like interest in it. For example, each June the railroads run cheap excursions to Guelph from all parts of Ontario, and some 40,000 people visit the college at these times, to hear the special lectures and to inspect "their college." The degree of B. S. A. is given by the University of Toronto, with which the college at Guelph is now affiliated, after a four-year course. Tuition is \$16 a year for residents, or \$40 for nonresidents; candidates for admission must be 16 years of age and must have worked at least one year on a farm. There is a short creamery course during December, and a twelve-weeks course in milk testing, butter making, and cheese making later in the winter, for which neither an entrance examination nor tuition is required. There are also short winter courses in stock judging and poultry raising. Besides these facilities, any man, woman, boy, or girl in Ontario can go to the college at any time for practical work, with more or less instruction from the man in charge in one or more departments without entrance examination and with merely nominal tuition. In connection with the college there is now Macdonald Institute, where nature study, manual training, and domestic science are taught, which is meant to draw students from the entire Dominion and not merely from any one province.

In June, 1891, this college sent out two men in a wagon, provided with a full equipment for making butter, who traveled from place to place, giving instruction in the best methods of manufacturing, making attractive packages, etc. This proved so successful that each year has seen more such outfits sent over the province, until now the work is directed by the department of agriculture, which maintains two chief instructors and 35 special instructors, each of the latter having 20 or 25 factories or creameries in a certain district assigned to him, almost 800 factories receiving instruction in this way. Each maker receives a visit once a month, and many of them call

meetings of the patrons on the dates of the instructors' visits. Dr. J. W. Robertson pointed out to a parliamentary committee in 1904 some of the results of such teaching. "In 1891 the dairy output of Prince Edward Island was worth \$8,448; the next year the government organized a government dairy station there and the best efforts were made to educate the people in this line. Ten years later, with no increase in the number of acres and little increase in the number of cows, the output was \$566,824. The same thing obtained in Ontario, and it increased the value of its output of butter and cheese from factories by over \$7,000,000 in ten years. In Quebec the same causes brought a like increase of \$9,000,000."

Provision has been made in Quebec on a most elaborate scale for higher agricultural instruction and research at the newly opened Macdonald College, located at Ste. Anne de Bellevue, 20 miles from Montreal. This is an institution such as only an experienced agriculturist and educator like Doctor Robertson, the principal of the college, could create, with years to plan for it and an unlimited amount of money at his disposal to carry his plans and ideals to fulfillment.

The college is divided into three schools, namely: (1) The school for teachers; (2) the school of agriculture; and (3) the school of household science. The school of agriculture offers (a) short courses of from two weeks to three months each, made as practical as possible; (b) a two-year course leading to a diploma, the first year consisting of a series of consecutive short courses; (c) a four-year course leading to a bachelor's degree, the last two years being a continuation of the two-year course. Nature study and manual training are included in the curriculum, and special courses to prepare teachers in these branches are contemplated. The material equipment appears from the announcement to be of the finest and most substantial description. The residence buildings are designed to accommodate 175 men and 225 women. The numerous laboratories for study and research are fitted up with the most modern appliances. The grounds consist of a campus of 74 acres with plots for illustration and research, a small cultures farm of 100 acres for horticulture and poultry keeping, and a live stock and grain farm of 387 acres. In the spring of 1908 a number of apprentice students will be admitted, who will be furnished an opportunity to pay their way through the college by work on the farms under competent instruction.

The entire college property has been donated to McGill University, and in addition Sir William Macdonald has provided an endowment fund of over \$2,000,000 for the maintenance of the institution as an incorporated college of the university.

In planning this institution not only have the better colleges of the United States and Europe been inspected, but the founders have visited

such schools as Hampton Institute, to quote only one example, and studied the way in which this institution is ameliorating the conditions of the Black Belt of the South and providing for the needs of the people at large.

A number of institutions of a secondary grade and higher for the teaching of agriculture were established in the United States during the second quarter of the nineteenth century, but all of them succumbed to various discouragements,<sup>a</sup> not the least of which was the lack of demand for them from the farmers. An agricultural school was established at Derby, Conn., in 1826, which flourished for a few years, but which eventually lapsed into a state of innocuous desuetude, from which it never recovered. Between this time and 1850 several small agricultural schools were opened in Connecticut and New York, most of which had but fleeting existences. In 1848 Yale College established a chair of "agricultural chemistry and vegetable and animal physiology," which Prof. John P. Norton occupied with distinction. In 1853 the State of New York established "The People's College," consisting of an agricultural college and an industrial school, which, after the passage of the Morrill Act of 1862, was given all the land acquired by the State at that time, but the land afterwards went to Cornell because of failure to comply with certain conditions imposed.

The first agricultural college in the United States was that of the State of Michigan, provided for when the State constitution was adopted, in 1850, and opened for students May 13, 1857. Less than two years later (February, 1859) the "Farmers' High School of Pennsylvania" - now the State College - was opened for pupils; later in the same year the Maryland Agricultural College was opened, and Iowa and Minnesota soon followed in the same path. Congress began to be asked to provide national aid for the foundation of other such institutions, State agricultural societies or State boards of agriculture leading the movement. The Hon. Justin S. Morrill, a Representative from Vermont, led the fight for Federal appropriations for this purpose; and although the Committee on Public Lands, on April 15, 1858, reported adversely on his bill to grant to each State 20,000 acres of public land for each Member of Congress, he succeeded in pushing his bill through both Houses, during the next session of Congress, only to have it vetoed by President Buchanan. In December, 1861, he introduced in the House of Representatives a similar bill, giving to each State approximately 30,000 acres of land for each Member of Congress, for the establishment of colleges "to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial

<sup>a</sup>True, A. C. Education and research in agriculture in the United States Yearbook, Department of Agriculture, 1894, pp. 81-116.

classes in the several pursuits and professions of life." This bill passed both Houses, and became a law upon being signed by President Lincoln, July 2, 1862.

It is interesting to know something of the causes which led up to the passage of this bill, and of the several intentions of various advocates of it. It came just at the climax of the first decades of the application of the revived sciences to commercial production, and the consequent expansion of our trade which brought with it the material prosperity and high prices of antebellum days. For twenty years popular works on science and the application of its laws had made the American people perhaps overcredulous of the possibilities in store for those with the necessary knowledge in the sciences. A vigorous reaction against the universal college curriculum brought a demand for something other than the classics. Surveying could be studied at only one school other than West Point, while the great railway systems in process of construction and projected demanded skilled civil engineers. Baron Liebig's popular Letters on Chemistry gave marvelous hopes for a new agriculture which should increase the production of farm products many fold. These, and other things of their kind, were in the minds of the advocates of the Morrill bill, and the colleges resulting were intended, by many who worked or voted for it, to prepare youth for almost any profession aside from the three so-called learned professions. Indeed, the title "Agricultural colleges" was inserted by the engrossing clerk, and was not originally a part of the bill.

It was provided that the entire proceeds accruing from the sale of lands given to the several States should be so invested as to yield not less than 5 per cent interest, the principal to "remain forever undiminished," except that not more than 10 per cent of the amount received by a State "might be expended for the purpose of lands for sites or experimental farms." It was expected that the States and munificent citizens would provide ample buildings, laboratories, etc., which has now been done in almost every case, although it took years for most of the States to awaken to the important duty they were called upon to fulfill toward the colleges of agriculture and mechanic arts within their boundaries. Kansas received the smallest allotment of land, 82,314 acres; New York the largest, 989,920 acres. About this time the Government gave immense grants of land to railroads traversing new sections of the country, and opened for homesteading other vast tracts. Accordingly those States which at once offered for sale their allotments were but little better off than before, some States receiving from the invested funds not enough income to maintain properly even one department of a college. Other States held their land for a higher market, and sold it so judiciously that the agricultural colleges will forever be

fairly rich institutions as the result—New York and Michigan being notable examples. Some 1,200,000 acres of these public lands still remain unsold, while the remainder has produced a principal of over \$12,000,000. At the present time there are 27 States having colleges of agriculture and mechanic arts as separate institutions, while 20 States maintain colleges of agriculture as departments of some university, State or otherwise.

Strictly speaking, comparatively little agricultural instruction was given in these schools during the first twenty or twenty-five years. Those farmers who did care to send their children to college wished them to receive training in other branches than agriculture, and these new schools, with so varying endowments and conditions, had each to solve its own problem. Most of them laid a deep and broad foundation in the natural sciences, but technical courses in agriculture were by no means neglected, and specialization in that branch produced results which drew attention to it as the years passed. Perhaps it was largely because there was no consensus of opinion as to what ought to be given in these agricultural courses that such a large number of States did little more at first than to add an industrial feature to a college already existing.

During the first quarter of a century of the existence of these schools a movement was springing up over the country which has made these institutions really deserve the name agricultural. The investigations of Liebig in Germany, of Boussingault in France, and of Lawes and Gilbert in England had shown to the world what science might do for agriculture as well as for the other arts. In 1851 some farmers of Saxony established the first experiment station, under the patronage of the University of Leipzig, and it was not long before the more progressive agriculturists of the United States were demanding like stations. The legislature of Maryland, in endowing its agricultural college in 1856, provided for "experimental studies in the cultivation of cereal and other plants adapted to the climate and latitude of the State of Maryland." In 1870 the University of California was doing similar work. In 1875 the State of Connecticut added to funds privately donated for the establishment of a State agricultural experiment station, the first separate institution of its kind in the country. North Carolina and New Jersey soon followed, while the faculties of agriculture in several States took similar work upon themselves as a part of their ordinary duty. State boards of agriculture and the Association of American Agricultural Colleges and Experiment Stations united in asking Congress to establish and provide for such stations in each State, but bills providing funds were several times voted down in the House of Representatives. Finally, in 1887, the Hatch bill became a law, which gave \$15,000 each year, *out of funds proceeding from the sale of public lands*, to each State

and Territory for the establishment and maintenance of an agricultural experiment station, which must be a department of the land-grant college, except in States where separate experiment stations had already been established. These stations conduct original researches on plants and animals, or in other directions bearing directly on the agricultural industry of the United States, "having due regard to the varying conditions and needs of the respective States or Territories."

The stations, primarily for original research, to-day form, with analogous divisions of the Department of Agriculture at Washington, the highest branch of our system of agricultural education.<sup>a</sup> Many of the experiment station workers do more or less teaching in the agricultural college of the State, while their laboratories are open to assistants from the student body, who do their small part in opening new paths of knowledge. The United States Department of Agriculture furnishes extraordinary facilities to teachers and graduates of the colleges and experiment stations who wish to do further research work. Secretary Wilson, in his report for 1903, says:

The Department has thus become a post-graduate institution, where groups of sciences are taught and applied. Comparatively little time is devoted to the ascertainment of abstract scientific facts. Every worker is helping somebody, and while doing this he is contributing to what is known relating to the farm and to the education of his associates. Since 1897, 496 students have been admitted to the Department for instruction in our several lines of work.

The Office of Experiment Stations is the Bureau through which the Department seeks to promote a better organization of the American system of agricultural education, from the common school to the graduate department of the college. Each individual station issues at least four bulletins a year concerning the work of its men, a copy of which is mailed, free of postage, to each newspaper in the State, and to all farmers who may request copies sent them. Dr. A. C. True has described the work of the experiment stations as follows:

In general, the work of the agricultural experiment stations, as organized in this country, may be classified as follows: (1) They act as bureaus of information on many questions of practical interest to the farmers of their several localities, (2) they seek by practical tests to devise better methods of agriculture and to introduce new crops and live stock, or to establish new agricultural industries, (3) they aid the farmer in his contest with insects and with diseases of his crops and live stock, (4) they help to defend the farmer against fraud in the sale of fertilizers, seeds, and feeding stuffs; (5) they investigate the operations of nature in the air, water, soil, plants, and animals, in order to find out the principles which can be applied to the betterment of the processes and products of agriculture.<sup>b</sup>

<sup>a</sup> True, A. C., and Crosby, D. J. American system of agricultural education. Dept. of Agriculture, Office of Experiment Stations, 1904.

<sup>b</sup> True, A. C. Education and research in agriculture in the United States. Year-book, Department of Agriculture, 1894, p. 115.

In perhaps every other channel of our industrial life inventions and discoveries of commercial importance are patented, and a large share of the benefit accrues to some individual or corporation; but the discoveries of the experiment station workers are turned over freely to the American people.

Mr. Morrill, father of the bill establishing the agricultural colleges, became convinced that the demands for collegiate instruction in agriculture and the mechanic arts were greater than the facilities for supplying them, and he, with other friends of the measure, secured the passage of the second Morrill Act, which became a law on August 30, 1890. This measure gave to each State and Territory \$15,000 for the year ending June 30, 1890, and an increase over that sum of \$1,000 annually until each appropriation should reach \$25,000 per year. These funds can be used only for "instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their application to the industries of life, and to the facilities for such instruction." Such States as desired were enabled to divide their appropriation between separate institutions for white and colored students, which has been done in 16 States, though no agriculture is taught in the Arkansas school for colored students so that there are now 63 agricultural colleges. But the instruction in these schools for the colored is almost all below college grade.<sup>a</sup>

The Adams Act, which became a law March 16, 1906, added immediately \$5,000 a year to the income of the State experiment stations. This sum is to be increased by \$2,000 each year for five years, and these funds are to be expended only for original research in agriculture. About a year later a bill became a law adding \$5,000 annually to the sum before received by each State for its agricultural college according to the second Morrill Act, until the total reaches \$50,000 a year. This means that within five years each State and Territory will receive annually from the Federal Government \$80,000 for its agricultural college and experiment station.

Such is the history of Federal aid given to the agricultural colleges. In a few cases private individuals have added in a small way to the endowment of some of these institutions. In Louisiana the Sugar Planters' Association has followed the example of many similar organizations in France in giving funds for the training of sugar experts. The States themselves have come to see the economic wisdom of providing liberally for the agricultural colleges in their midst, especially in the large farming States of the Middle West, where large sums are readily voted by the legislatures at the suggestion of the president or

<sup>a</sup> True A. C. and Crosby D. J. American system of agricultural education Dept. of Agriculture, Office of Experiment Stations, 1904 pp. 8, 9.

regents of the agricultural college. For example, during the fiscal year of 1902-3 special appropriations "for the better equipment and maintenance of these institutions aggregating more than \$1,500,000 were made;" while the next year more than as much again was given by the States Iowa, New York, Pennsylvania, and Minnesota each appropriating over a quarter of a million dollars for new buildings and equipment—and all this in addition to the annual appropriations for maintenance.

This is allowing the extension of work in two directions: "(1) To make the courses of college grade more complete by the differentiation of the different branches of agriculture and the addition of courses in rural engineering and rural economy; and (2) to provide for the broader extension of agricultural education through secondary schools, short courses, summer schools, normal courses, correspondence courses, farmers' institutes, and other forms of university extension work." These have been the principal lines of progress of the last fifteen years. It has come to be seen that the real function of these collegiate courses is not to educate farmers generally—they must be provided for in some other way—but rather to train leaders in agricultural progress. It is hardly a serious criticism of such institutions to complain that comparatively few of their graduates return to the farm. Badly needed as they are on the land itself, they find a greater demand for men to open the way for new uses of products, or to discover and apply still other scientific laws to agriculture. And so the college course of four years in agriculture has come about in most of the colleges, while both the entrance requirements and the grade of undergraduate work done tend to become higher. The Association of American Agricultural Colleges recommends that the entrance requirements be on a level with those of other first-class colleges, and many have adopted this plan. Some institutions, under certain conditions, admit pupils from the rural schools as special students, because there are no secondary schools of agriculture to fit them for higher work. And so long as this condition exists there seem but two possibilities if the college is to meet the needs of the farmers: Either to admit boys and girls from the rural schools, or else to provide a secondary school of agriculture for them, as Maine, Minnesota, Nebraska, Rhode Island, and Washington have done.

There is everywhere a tendency to make the four-years course leading to the bachelor's degree fully equal in scope and thoroughness to those of the other colleges of a university, with a consequent enlargement of the electives possible during the latter part of the course. While the basal studies are comparable in the various States, each institution is specializing along lines of greatest advantage to the farmers of the State in which it is located, and in

hand with the State experiment station. The University of Maine teaches forestry in its agricultural college. The University of Missouri, in connection with its new Teachers' College, will give especial attention to training for the instruction in agriculture demanded in the schools of the State. Wisconsin, besides special work in agricultural physics, is known the world over for its instruction and discoveries in dairying, especially through the apparatus for testing the amount of butter fat in milk, invented by Dr. S. M. Babcock, which is now used in practically every civilized country, and by means of which literally millions of dollars annually are saved to manufacturers of butter and cheese, and so to the consumer.<sup>a</sup>

Some years ago several of the colleges undertook to offer short courses in agriculture for young men who wished some practical knowledge of the better methods of farming, but who could not afford to spend four years at the college. For some time these courses proved disastrous, in that they were not sharply enough distinguished from the complete course, and there was a prevalent suspicion that they were every whit as valuable—"merely the four-years course with the frills left off." Happily the project was not abandoned, the true function of these courses came to be understood and appreciated, and now they have come to be the colleges' best means of keeping in touch with the mass of farming people. A greater and greater number of these courses are offered each year, by 44 or more of these institutions. They vary in length from two college years to a very few weeks, are usually given during the winter, and are designed for: "(1) Those preparing to enter a four-year agricultural course; (2) those desiring instruction in agricultural subjects, but having insufficient scholastic attainments to carry the full collegiate course; (3) those unable to leave home for an extended course, who desire instruction in some particular phase of agricultural science or who wish to become proficient in some branch of agricultural practice; and (4) teachers desiring to prepare themselves to give instruction in nature study and elementary agriculture."<sup>b</sup> Thirty colleges offer courses of the first or second class, all but 9 of which cover more than a year. There are many one-year or two-year preparatory courses, and a few colleges now give high school agricultural courses of two or three years. Most of these latter have proved to be of greater use in preparing young men and women to go back to the farm for a life of successful work than to train up candidates for the four-years' course—a strong argument for the agricultural high school. Instead of secondary courses,

<sup>a</sup> Harwood, W. S. *The mastery of the earth.* American Illustrated Magazine, Dec., 1905, pp. 123-133.

<sup>b</sup> Crosby, D. J. *Special and short courses in agricultural colleges.* Dept. of Agriculture, *Office of Experiment Stations, bulletin 139*, p. 7.

so-called, some of the colleges give what they term "practical agricultural courses," of one or two years, made adequate to the needs of those with limited previous education, by offering "a minimum of culture subjects and pure science, and a maximum of applied science." So long as a majority of the graduates of the four-years' courses are attracted away from the farm, as will be the case until the colleges send out enough trained men to supply the demand for them in special positions, just so long will the colleges be under obligation to keep the ranks of the farmers themselves filled with men trained in these secondary, or practical, courses.

There would still be no provision for those people, young and old, actually engaged in agricultural pursuits, who are unable to spend even one entire year away at school, and yet who are keenly alive to their deficiencies in the more recent and economical methods. For just this class all the better colleges now offer short winter courses of a few weeks in subjects of importance to the people of the State in question. In some of the farming States, where appropriations are liberal and the institutions are most progressive, many such courses are offered, six colleges giving a total of 44 of them each winter. Some courses cover only a week or ten days, some extend over three months, all are as practical as they can be made, the students doing as much actual work as possible. "The nature of these courses is even more varied than their length of term. Various colleges offer courses in general agriculture, dairying, creamery management, farm dairying, poultry raising, cheese making, animal husbandry, horticulture, domestic science, floriculture, agronomy, bee culture, forestry, beet-sugar production, farm mechanics, botany, bacteriology, entomology, stock judging, and corn judging."<sup>a</sup> It is these courses which are influencing our agriculture day by day, and which are awakening the farmers to the necessity of an agricultural education for themselves and their children. The University of Illinois during the winter of 1905-6 inaugurated a new feature in the way of a short course of two weeks for boys in the rural schools, who should be given scholarships by country farmers' institutes for their success in judging corn. This course contained a host of useful things from many of the agricultural branches, which would be useful not only in the lives of the students, but which would interest the boys in the schools at home, and perhaps arouse a permanent interest in the applications of science to their life on the farm.

The number of agricultural colleges maintaining summer schools for teachers or offering normal courses of one or two years is slowly increasing, and would probably be still larger were not most of the colleges already handicapped for want of funds and the members

<sup>a</sup> Crosby, D. J. Special and short courses in agricultural colleges. Dept. of Agriculture, Office of Experiment Stations, Bulletin 139, p. 8.

of the faculties badly overcrowded with work. In the States where elementary agriculture is being introduced into the public schools the teachers attend these courses in large numbers and seem to enjoy the work and to be anxious to learn as much as they can in the time at their disposal. Originally nature study predominated in these courses, but now elementary agriculture seems to be receiving more attention. The "Summer School in Nature Study and Country Life" of the Connecticut Agricultural College may be cited as an example; the instruction is given during three weeks of July, and includes the following topics: Our common birds, insects, geology, botany, landscape gardening, forestry, flower growing, soils, cereals and grasses, vegetable growing, plant enemies, farm animals, stock feeding, dairying, and poultry culture. The course certainly is broad enough; the wonder is that so many things can receive any adequate attention in three weeks. The short winter courses are a monument to the noble efforts of the colleges to meet the present needs of the people; summer courses in elementary agriculture for teachers, at least in all States where there is an effort to introduce that subject into the rural schools, are needed fully as much, and will produce as great results.

Columbia University has just announced (May, 1907) as follows:

We have arranged to accept at full value for the Columbia degrees work done in agriculture at any of the leading agricultural colleges. Our arrangements have been made especially with Professor Bailey at Cornell and have the Cornell scheme of course in view. Nevertheless, we can easily adjust our work to that done in any other institution if it be of the Cornell grade. \* \* \* We are genuinely interested in doing what we can for the training of agricultural teachers. Necessarily our efforts will be directed mainly to the work of practice teaching and general theory in training schools for agricultural teachers and for positions of director, principal, etc., in such institutions.

Forty of the agricultural colleges now offer graduate courses for the master's degree, and 9 of them give sufficient graduate work to enable the student to take his doctorate. The research work necessary for the latter degree is frequently done in the experiment station connected with the college, directed by the experts in charge. During the summer of 1902 a graduate school of agriculture was conducted at the Ohio State University, the courses being given by experts from all over the country and from the Department at Washington. Seventy-five students were in attendance from 28 States and Territories. During the next four years no one State felt like assuming the expense of such an institution, but a committee of the Association of American Agricultural Colleges and Experiment Stations was engaged in working out plans for the establishment of such an institution as a permanent feature of our system of agricultural education. The summer of 1906 saw its revival under the auspices of the above association on a better basis at the Illinois

Agricultural College, the college, it may be noted, which stands for receiving the farm boy with whatever education he may have and giving him all he is capable of taking away.

The International Agricultural Institute at Rome will probably be opened, through the cooperation of the greater share of the important countries of the world, in 1908.

A great deal of extension work is being done by the agricultural colleges, aside from the millions of copies of publications of the Department of Agriculture which are supplied to farmers, and the bulletins of the State experiment stations. In half a dozen States "experimental unions," composed of graduates and former students, are organized to cooperate with the colleges in their experimental work and to spread abroad the results of their discoveries. Several of the colleges are at the head of the movement in their States for the formation of boys' and girls' agricultural clubs, and the consequent instruction in the rural schools. Many of the institutions publish pamphlets on nature study, school gardening, etc., which are sent free to children and teachers asking for them. Ohio University employs a man in charge of the extension work among the rural schools, as do the State agricultural colleges of Iowa, Illinois, and New York, and furnishes free to teachers' institutes competent lecturers on nature study and other such topics.

One of the most important features of agricultural extension work, and one which merits an entire book instead of the few lines that must suffice here for want of suitable space, is that of farmers' institutes. These are directly under the patronage of the Federal Department of Agriculture, but are often conducted under the auspices of the State agricultural colleges. Almost a million people annually attend these institutes, to which the colleges send their best speakers.

The agricultural colleges of New York, West Virginia, South Dakota, and Michigan, at least, conduct farmers' reading courses, and in some cases additional courses for farmers' wives. The colleges send out to members of the clubs questions on each course, which are answered, and, after being carefully criticised at the college, are sent back to the members again. Pennsylvania State College offers a correspondence course in agriculture, and the University of Wyoming gives similar courses in agriculture and horticulture. Mimeograph copies of lessons prepared by members of the university faculty are sent free to members, whose answers to examination questions are corrected and returned.

This innovation has been copied by four private institutions which now offer, among other correspondence courses, work in agriculture. A Springfield, Mass., institution offers yearly courses in agriculture, horticulture, and agricultural bacteriology, the work for which has been prepared by professors at Amherst Agricultural College, Cornell,

and Wesleyan. This work was first offered in 1901, and was followed two or three years later by a Washington, D. C., school, which offers 14 courses in agricultural subjects, the lessons of which are furnished by experts of the United States Department of Agriculture, and which consist, for the most part, of lectures delivered by them on their specialties. In addition, the institution has mailed to its students from the Department copies of farmers' bulletins bearing on the subjects of the lectures. Another Washington correspondence school offered in 1905 courses in general agriculture, tropical agriculture, and agricultural economics. Previous to that time some of the faculty of the Iowa Agricultural College offered courses in agronomy, animal husbandry, and veterinary science, through the medium of correspondence. These private institutions seem to fulfill a true function in teaching a certain class who would not otherwise study because the information was free. One of these schools frankly writes me that most of the things sent in their lessons are procurable from the Department of Agriculture free of charge, but that if free they would not be taken advantage of by their clientage. It is unnecessary to point out further that, through its distribution of vast quantities of reading matter, the Department itself comprises, among its other functions, that of a correspondence school, and that the experts of a State experiment station will answer questions of a technical nature which have proved too hard for the student.

Perhaps the latest phase of extension work is the cooperation of certain of the agricultural colleges of the Middle West with the railway systems traversing their States, in sending "corn-gospel" trains over the systems, in charge of members of the college faculty. Begun in the spring of 1904, in Iowa, by two of the railways crossing the State, a special train was taken through more than a third of the counties of the State, and at each of the 150 stops Prof. P. G. Holden, of the Iowa Agricultural College, addressed large numbers of farmers on the subject of "seed corn," demonstrating to them what had been discovered at the college shortly before, that only 63 per cent of the seed corn ordinarily used by them was worth planting. Not only did the farmers attend these lectures by the thousands, but many teachers heard them as well, and later had their pupils bring corn from home for testing, and carry the results back to their parents—an exceedingly good lesson on the economic value of nature study. This extension work proved to be worth millions of dollars annually to the farmers of Iowa, and since then the Rock Island, Burlington, Missouri Pacific, and other roads have carried such trains, without charge, through Illinois, Kansas, Missouri, and neighboring States.

## CHAPTER VI.

### PRACTICAL ADVANTAGES OF AGRICULTURAL EDUCATION.

It is hoped that the preceding study, even the historical portion of it, has pointed out, to a greater or less degree, at least two things: (1) The need of a good agricultural education for rural communities, and (2) the values, educational, economic, ethical, and social, of such an education; and that some of the problems have been indicated which such education has helped to solve, and which it may be expected to solve again in other places. In this final chapter, then, it may be of advantage to recapitulate by making cross-sections of what has gone before.

No serious student of our American system of education would defend the conditions in our rural schools to-day as being the best to prepare the pupils for successful, happy lives, or for the highest plane of citizenship. Many reforms would be necessary in order to supply adequate educational facilities to the pupils of our rural schools, who comprise about one-half the school children of our country. More than nine-tenths of the country school children never attend a graded school. Whose is the fault we need not stop to inquire. Not only do these children have the right to demand better training, however, but the nation has the right to demand better citizens than is possible under the present conditions. In some parts of the South, if not in most of the Southern States, the conditions of the people have in the past, at least, forbidden the levying of sufficient local taxes to support good schools, in well-to-do sections in many parts of the country the low educational ideals of the people must be lifted. In the South there is a great demand for agricultural instruction in the schools. In the West interest in education is quickened by showing the people the financial advantages to be secured through scientific agriculture. There are not a few examples of counties indeed, of States where the farmers are now leaders in the demand for a better and higher education; more bushels of wheat, corn, and potatoes to the acre have accomplished what the pleading of school men failed to do.

Our first schools were for the purpose of training young men for the ministry, and ever since the foundation of education in the United States the curriculum of even our elementary schools has

been tailor made, according to the fashions prescribed by the classical colleges. The conservatism which has cut out a course of study to fit the 5 per cent of the elementary scholars who go on into the high school, and which forces the remaining 95 per cent to wear a misfit or go without intellectual clothing, is scarcely worthy of our progressive spirit along other lines. Instruction in agriculture would force none of the present subjects out of the rural schools (although its introduction would seem to me justifiable even if it should do so), for several of the subjects could be profitably pruned down perhaps a quarter, as Doctor McMurry has shown.<sup>a</sup> Indeed, most of our text-books to-day are manufactured to suit every possible superintendent who wants certain features included, and who has no qualms against ruthlessly cutting out those parts which he does not think valuable. A proper correlation of agriculture with the other studies would furnish plenty of material for school use which would mean more to the children than would text-books, especially in arithmetic, compositions, etc. For example, Miss Shaw<sup>b</sup> tells of a Wisconsin boy near one of the county high schools, whose father scouted the theories of the school. The boy had two pigs, and he went to the high school instructor to learn how best to feed and care for them. They did better than did any of his father's pigs, and compositions, always greatly dreaded before, now came readily, in each of them a naive account of the progress in the conversion of his father.

Most of the pupils in our rural schools have but two sources of information, namely, the world around them and books. It is sad to think how little many of them get from either. Nature study in the earlier years teaches the child to observe, inference gradually comes in as he combines his observations, until in the higher grades he reasons from cause to effect. Until within the last two decades the education of our schools was confined to thinking; the doing was limited to work with pen or pencil. Manual training is now recognized as of great educational value, but the impossibility of suitable equipment for wood, clay, and iron working prevents our rural schools from attaining to the efficiency of our city schools. School gardens make good this deficiency and furnish the first opportunity for coordination between mental and motor activity. As the child grows and his interest enlarges he should be given larger opportunities for determining, guiding, exercising, and controlling his motor activities. The work of the boys' agricultural clubs is a good example of what may be done, and the increased attendance of scholars just

<sup>a</sup> McMurry, F. M. What omissions are advisable in the present course of study, and what should be the basis for the same? N. E. A. Report, 1904, pp. 194-206.

<sup>b</sup> Shaw, A. M. Backward country schools near cities. World's Work, Sept., 1904, p. 5252.

from the rural schools upon the more elementary courses of the Illinois Agricultural College shows the result.

There is almost as much need of nature study with an agricultural trend, of school gardens, and of agricultural instruction in many of our city schools, as in the country. Before the introduction of manual training, our educational system had made no provision for those pupils of a distinctly motor type. Many of them are now being lifted to a higher plane of life than before; and the introduction of gardening into the schools of cities of considerable size has saved a large number of others from dropping out of school without any broad life interest and with but a small part of what the school should give them. There are, moreover, in the schools of all our cities surrounded by farming or horticultural industries, a considerable number of children who must eventually gain their livelihood in such work, to say nothing of the pupils from rural communities who come into the urban schools because of their superior advantages. Certainly, if the aim of education is to fit for life, these boys and girls should be taught according to their needs and not along some hard and fast course of study mapped out for those who wish to prepare for college. A large number of our cities now have manual training high schools for children needing such training as they give, and it is right that it should be so. There is even more justification for the teaching of scientific agriculture, since it would probably tend to check the congestion of our cities, while the former has exactly the opposite trend. One extra teacher in a high school could give instruction in agriculture, open as part of an elective course to those who cared for it, along with most of the other scientific subjects, but with less language. Doctor True's suggestion,<sup>a</sup> that in case a small city inaugurated an elective course in agriculture, the outlying rural districts should help to pay the expense accruing and send their common-school graduates there, seems to me a good one.

It has not been possible to consider the need of a good agricultural education for the children of rural communities without touching, at almost every point, some argument for the educational value of agriculture. Before formal schools were thought of the race made its progress by studying nature and by manual training; later the school came in to supplement these and finally usurped their place, absorbing all the time of the pupil in the consideration of books. Every race has dug its civilization out of the ground; the boys are doing the same thing, successfully, in a number of our American schools. It is time for us to ask again, with Demolins, "Do our schools make men?" Are they helping to maintain the superiority of the Anglo-

<sup>a</sup> True, A. C. Progress in secondary education in agriculture. Yearbook, Department of Agriculture 1902 p. 500.

Saxon? Few visitors to Hampton, Thompsons Island, or the Berkshire Farm School do not remark, wistfully: "How I wish I might have spent my school life in such a place!" Thompsons Island will take a depraved boy; the Berkshire school takes but few who are both alike turn out efficient young men. Hampton and kind' schools are reforming the colored race in the South, educational! well as materially and morally, and believe their best work is through agriculture and gardening. We have long believed the painter, the designer, and the sculptor express the highest for thought in their handiwork. Lately we have accepted work: clay, wood, and iron as true expressions of thought. In the way exact and well-ordered thought is required in the problem the farm, in bringing the various kinds of soil to the maximum productivity, and in the handling of the complicated machinery hand.<sup>a</sup>

Indeed, the value of elementary agriculture in the common schools is now recognized almost all over our country, and each year introduction into one or more States. It is natural that there should be so long before there is much agitation for agriculture in schools, because a professionally trained teacher is not a necessity in the elementary school to make the instruction successful. Perhaps it is wise to have such a study as this, in which children may know as much as or more than their teacher, who shall superintend them, only using his larger powers for the skillful guidance of the children. To make a success of school gardens without experience in gardening is more difficult than with nature's help; with foresight and pertinacity it can be done. In those States where the law has made such instruction mandatory upon teachers there are hundreds of cases where teachers have had success of teaching elementary agriculture, although probably not at all trained for the work. But in the secondary schools it is impossible. There must be trained teachers in those schools to assure scientific instruction.

If there were in the early days of our agricultural colleges no provision for their establishment, there is as much to be said for the foundation and maintenance of secondary agricultural schools. The advocates of the first Morrill bill never dreamed of the creation of a distinctly university field of agricultural work; they meant to train skillful farmers. But those institutions have kept pace with the wonderful progress made in the science of agriculture; except for the short and special winter courses, they pretend to do much more than give to the world a class of leaders in agricultural progress—experts in various lines of agriculture.

<sup>a</sup> True, A. C. Educational values of courses in agriculture. *Bulletin, series 6, no. 19.*

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<sup>a</sup> Ontario Dairymen's Association, p. 142.

<sup>b</sup> E. The teaching of agriculture in elementary and high schools in the  
Special reports on educational subjects [England], 1901, vol. 4, p. 810.  
on, Booker T. Working with the hands, 1904, pp. 169, 170.  
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came to the rescue, and they are freely furnishing trains to carry over their lines agricultural college lecturers who shall teach the farmers how to raise a fifth more corn through the careful selection of seed, and Iowa has already added \$8,000,000 a year to her income as a result. Many boys' agricultural clubs are studying the selection of seed corn, with the consequence that some Illinois boys are selling their corn for five times as much as their fathers are able to get for theirs.

The economic necessity for such instruction is all the more imperative because even a farmer can not live unto himself and be successful. Half of our total exports are agricultural products, and our farmers must have good markets abroad to reap rich returns from their crops. Science, however, knows no geographical boundaries, and the latest discoveries bearing on agriculture are taught in the elementary and secondary schools of several of the European countries, as we have seen. Moreover, in a monarchy a change in the educational system works from the top down very quickly. In practically all the European states the government provides traveling schools and itinerant instructors for teaching young people and adults alike the new methods of production. Sweden each year selects scores of her most progressive farmers, one only from a locality, and sends them on a visit to the better farms and experiment stations of the surrounding countries; on returning each of these men acts as a center of information for his entire community. It is just in this way that the European farmer is enabled to compete successfully with us. For example, he buys our entire surplus of cotton seed very cheaply and feeds its meal to his cattle, thus making him a successful competitor of ours, while many of our Southern farmers do not yet fully recognize its value as a fattening product, although this was demonstrated at the University of Tennessee experiment station in 1901.<sup>a</sup> The Danes receive \$8,500,000 a year more for their bacon, butter, and eggs than England pays to other countries for the same amount of such produce, although twenty years ago, before the children of Denmark were generally taught about such things, the Danish products received less than the usual market price.<sup>b</sup>

Prof. G. L. McKay, of Iowa State College, found Danish butter in England constantly bringing 2 to 3 cents a pound more than any other butter because of its dry, mealy appearance. Investigation, however, proved that the butter in question actually contained 2 to 3 per cent more water than American or Canadian butter. In other words, the Danes get 2 or 3 more pounds of butter fat to each 100 pounds of butter fat, and yet sell it for 2 or 3 cents a pound more.

<sup>a</sup> Annual report, University of Tennessee agricultural experiment station, 1901.

<sup>b</sup> Report, 1904, Ontario Dairymen's Association, p. 35.

Why? Because they have found the secret of making butter containing this extra amount of water appear to be extra dry, and the process is taught in the Danish schools.<sup>a</sup>

The farmers of Ontario have doubled their output since the founding of the Ontario Agricultural College, without any appreciable increase either in population or acreage.<sup>b</sup> The money value of an agricultural education was recognized by Mr. Joseph Chamberlain when he said before the House of Commons, while advocating a liberal appropriation for the agricultural schools in the West Indies: "I regard the whole of this cost as being an expenditure intended to relieve the British Government of future charges."<sup>c</sup>

The prosperity of our farming districts and States is not alone in demanding the scientific training of our future agriculturists and horticulturists. The welfare of our cities and of our great manufacturing States is dependent upon our agricultural prosperity to no slight degree. It would be of inestimable value to the factory employees of New England if the abandoned farms with which the States are still dotted could be made productive and economically valuable. Urban conditions in the South would be materially bettered by increased productiveness of the surrounding country, which can readily be brought about by a better education of its owners and tenants as to how to deal with their land. Intensive farming is already being made profitable on land once abandoned as not worth the taxes imposed, and scientific agriculture has netted a gain of \$96.22 an acre on some of the poorest land in Alabama.<sup>d</sup> One of the Tuskegee farmers' leaflets tells how Mr. G. W. Carver raised 266 bushels of sweet potatoes on 1 acre of land, with a net profit of \$121, while the average yield in the vicinity was 37 bushels. "The average yield of cotton throughout the South is 190 pounds per acre, usually below the paying point. Every acre can and should be made to produce 500 pounds of lint. However, if every grower added but 5 pounds an acre, it would be worth (at 1903 prices) \$15,000,000 more than at present."<sup>e</sup>

Blinded as we are, too often, by our utilitarian tendencies and our search for the practical, it may seem rather strained at first to lay much stress on the ethical value of instruction in agriculture, but I am convinced that it is of great importance. Instances might be multiplied of transformations in character wrought by school gardens, to say nothing of the love for God's out-of-doors and for

<sup>a</sup> Report, 1904, Ontario Dairymen's Association, p. 142.

<sup>b</sup> Ibid., p. 205.

<sup>c</sup> Sadler, M. E. The teaching of agriculture in elementary and high schools in the West Indies. Special reports on educational subjects [England], 1901, vol. 4, p. 810.

<sup>d</sup> Washington, Booker T. Working with the hands, 1904, pp. 169, 170.

<sup>e</sup> Ibid., p. 185.

His creatures coming from nature study. Police officers and courts in New York, Philadelphia, Cleveland, and Dayton, Ohio, among other cities, are glad witnesses to the civic virtue arising out of the proprietorship of a little piece of land. Respect for others' property is engendered in no way so quickly as by letting a child possess some of his own, for thus economy, honesty, application, concentration, justice, and the dignity of labor are brought into the children's lives in a telling way. A study of the laws of nature may well teach one that "Whatsoever a man soweth, that shall he also reap," in his life as well as from the soil. In working through a long season, side by side with others, the child gets his earliest and best instruction in social responsibilities, in what he owes to his neighbor, one of the most important things an individual of to-day has to learn.

Early experience in success and failure, and the learning to plan for the future and to work in the expectation of reward later, are among other benefits of an agricultural education, and with these goes the consciousness of one's power to create value, to take care of himself if other things fail, to be independent when thrown on his own resources, the ability always to fall on his feet. As a corollary there will come an added respect for the farm and for the farmer, a thing greatly needed in America, where agriculture does not command the prestige which belongs to it in other countries. The country boy whose principal acquaintance with the soil has been unreasoning work with it, is not attracted back to it for his chosen residence after being called "farmer" by the contemptuous boys of the town. Both urban and rural people need to be educated in this respect, even more than our agricultural colleges have educated them, great as has been the change they have brought about.

Our better agricultural colleges are not satisfied to train men to be able to produce more grain to the acre, or more pounds of meat from a suitably balanced ration, but the students are being shown how they may best become leaders among their fellows; how they may "make agriculture a live, progressive art, which in the future shall provide a more stable and satisfactory basis for thrifty, intelligent, refined, and happy rural communities, as well as a stronger guarantee for the manufactures, commerce, literature, art, and science of a higher civilization."<sup>a</sup>

And along with the ethics which should result from such instruction the religious instincts of the child and the youth may well be appealed to and healthfully stimulated. That one could study nature, the out-of-doors, God's handiwork in the world, and not come to a truer reverence and love for Him who made all things and the laws by which they are governed, seems to me incomprehensible. A

<sup>a</sup> True, A. C. Educational values of courses in agriculture. University of Ohio bulletin, series 6, No. 19.

most appropriate motto for every school of agriculture, of whatever grade, or for any text book unfolding the wonderful processes to which man can cause nature to respond, would be: "Open Thou mine eyes, that I may behold wondrous things out of Thy law."

Inseparable from a better ethical status of any considerable group of a people is the changed social status of the entire larger group. It is because of the certainty of improved social conditions that such organizations as the American Civic Association are putting forth their best efforts for the introduction of gardens into our city schools and of elementary agriculture into the schools of rural communities. It goes almost without saying that anything which exerts a favorable influence educationally, economically, and ethically will be of value socially. In addition, however, there may be pointed out several specific social problems confronting us to-day which theoretically a general education in agriculture ought to bring nearer a solution and which practical experiments show may be done in reality.

We have already noted the changed character brought about in the Indian schools since the introduction of agriculture into their curriculum; over 25 per cent more Indians are self-supporting than before, and around the tepees of the blanket Indians even little gardens are appearing, here and there, which mean a relinquishing of the nomadic life and a rise to a higher plane of civilization. The numerous farm schools over the country, including the large secondary school of the St. Joseph's Directory, of San Francisco, have turned scores and hundreds of youth out of the highways of crime into paths of industry and good citizenship. A large increase in the number of such schools would mean not only the prevention of crime, but the lessening of tramps and pauperism. Sociological students of the past decade have shown that only a negligible per cent of our tramps have ever tilled a foot of soil. Agriculture is the one occupation which is not at present deplorably overcrowded and in which there will be a place for at least twenty years to come for every intelligent, strong man to make and keep himself independent.

The most serious difficulty with which the American farmer has to deal, especially in manufacturing States or localities, is that of securing labor to carry on his work. This is not confined to any particular section—New England and Kansas are alike crying for help. I have lived in a locality where a great majority of the young men have left the rich farms of the surrounding country to reside in miserable little homes in the towns and cities, where they work in zinc smelters, amid the heat and fumes of sulphur, prodigal of their health and strength, though they know full well how soon a smelter employee breaks down. The same thing is seen in the factory districts of the South and in rural New England. This would not

occur were it not that our present schools are largely devoted to educating the country children away from the farm, and in farming districts of uneducated people one can not blame the young people for getting away from their usual surroundings as soon as possible.

Statistics of France and Belgium, among European countries, show here and there a movement of population toward the country from the city since an elementary agricultural education was made compulsory. It may be that this is nothing more than a coincidence, but if so it is a striking and very happy one. In such of our own States as Illinois and Iowa, where agricultural education is in its most flourishing condition in the United States, the young people are proud of their homes and of their farms, and with good reason. They go through the high school, with the intention from the first, often, of going on to their State agricultural college and of learning how to do better work with their home farms than their fathers have done before them; not alone to learn how "to raise more corn, to feed more hogs, to buy more land, to raise more corn," etc., ad infinitum, but how to live on as high a social and intellectual level as that of their cousins of the city. It is not so much because their land was originally rich that these farmers have been able to make it worth from \$100 to \$150 per acre for farming purposes, to have country homes with all modern conveniences, to send their children to college, and to have a piano and the best reading matter in every home, but rather that they have learned how best to use their land. A few years ago several colonies of people from two of the richest agricultural counties of Iowa sold their farms for \$100 or more an acre, bought Kansas farms for half as much, and are now raising as good crops as before, thus doubling their money. It is largely because of the added social advantages which a good agricultural education gives that the farmers of the Middle West are so proud of their agricultural colleges and of such agricultural high schools as those of Wisconsin and Minnesota.

The American Institute of Social Service is conducting a propaganda for the establishment of schools "for children of weak and undeveloped constitutions whose power of resistance is small," where the buildings shall be surrounded by trees and where gardening shall be the particular feature. Such schools are well known in Germany, where they have proved of especial value in preventing tuberculosis. The largest of them, at Charlottenburg, accommodates 120 children, who are selected by the board of health, and, according to the report made to the Tuberculosis Exposition in Paris in October, 1905, over 70 per cent of their pupils have been entirely cured or greatly improved, while less than 2 per cent grew worse after admission. A recent editorial in Harper's Weekly reports organized opposition from the Gardeners' Union in Germany to the prescription of garden-

ing by physicians for anaemia, neurasthenia, chronic bronchitis, and chronic gastritis, a treatment now becoming rather common, because gardening, "being found useful in curing the sick and building up the weak, will tend to make a large number of such people immediately become gardeners." The district nurses of some of our American cities report much better health among children at work in school gardens than before such work was undertaken—a thing of no inconsiderable importance to us as a people.

Any exhaustive consideration of the subject at hand brings us sooner or later face to face with a problem that is ever growing more important and in connection with which, it seems to the writer, the question of agricultural education is especially apropos at this time. Sooner or later we must find a just and adequate solution of the negro problem. The spread of trades-unionism in the South and of rice growing by whites from the North together form a cloud on the horizon considerably larger than a man's hand. The trades-union follows the introduction of the white mechanic or of the factory operative, and "the negro is crowded to the wall."<sup>a</sup> More and more are the negroes being shut out of work in factories, for which, however, they do not seem naturally so well fitted as for agriculture; perhaps there is more truth than fiction in the assertion that the negro must dig his civilization from the soil as other races have had to do. There is still another reason, fully as pregnant with importance, why the negro of the South should be taught scientific farming. After a careful study of the negro, Dr. Carl Kelsey finds<sup>b</sup> that there are race troubles where and almost only where the blacks and whites "come into competition in cheap employment in the fields and otherwise." Good agriculture, and the consequent farming of their own land by both races, would overcome this, as it has done in dozens of sections of the South, such as tide-water Virginia and other localities where the people have been taught to raise diversified crops and to till the soil properly.

Now that the cheap lands of the West have so largely been settled, the tide of immigration is setting southward. Northern capital and industry are at work on a large scale in several of the Southern States. For instance, the rice industry of Louisiana has been revolutionized and the negro is utterly out of the field. If this is to continue, we shall be face to face with a problem even more serious than our present one. What shall become of the colored people already largely shut out of those industries which have been unionized? The negro of the South has never faced severe agricultural competition: will he become economically secure before he is called upon to live in spite

<sup>a</sup> Washington, Booker T. *The future of the American negro*, pp. 78, 79

<sup>b</sup> Kelsey, Dr. Carl. *The negro farmer*. (University of Pennsylvania thesis.)

of it?<sup>a</sup> If so, there must be a great change, which can be brought about in no other way than by making an education in scientific agriculture available to the entire rural population of the South, where only 20 per cent of the people live in cities. It is almost impossible for one who has not lived in the South to appreciate the deplorable conditions among the small farmers, black and white alike, though as a whole the negroes live in more wretched circumstances than do the whites. Large tracts of land have become exhausted because of the poor methods of farming and have been allowed to grow up to woods. Cotton and tobacco are the staple crops to such an extent that rotation of crops is the exception rather than the rule. Diversified farming must be shown to be profitable and the people taught how to practice it successfully. This will not only prepare the negro to meet competition and prevent race troubles by keeping him from marketing his labor along with that of the poorer whites, but it will have its moral effect as well. With cotton and tobacco the only crops, the negro is idle a considerable part of the year, which is not particularly conducive to good morals or to habits of industry and frugality. In many counties of the Black Belt the great majority of the negroes mortgage their crops of cotton for food to live on while these crops are growing, live on rented land, and attempt to pay interest on their advances ranging from 15 per cent to 40 per cent per annum.<sup>b</sup> Raising their own garden truck is a rare thing; they hardly know how, and so have to buy any they may use. Diversified farming intelligently done has transformed large districts elsewhere in the South, increased the total production of the land, made a majority of the resident negroes landowners, and bettered their moral and social conditions to a striking degree.

Naturally an overwhelming share of the colored illiterates of our country are in the South, while with 24 per cent of the total white population 64 per cent of the white illiterates over 10 years of age live here also. Half of the negro children of school age and a large share of the whites are without any school facilities, and many of the rural schools are in session but from four to eight weeks a year.<sup>c</sup> Clearly something ought to be done, and that speedily, toward the amelioration of such conditions. Rapid as is the present progress along educational lines in the South, there is to-day in every one of the Southern States a crying need for more and better schools, and those for the negro, at least, should be industrial rather than classical, for in the effort to lift the negro to better social, moral, and hence mental conditions, the efficaciousness of such schools as Hampton and Tuskegee over those giving formal mental training is now hardly

<sup>a</sup> Kelsey, Dr. Carl. *The negro farmer.* (University of Pennsylvania thesis.) Pp. 68, 69.

<sup>b</sup> Washington, Booker T. *The future of the American negro*, p. 116.

<sup>c</sup> Sinclair, W. A. *The aftermath of slavery*, 1905, p. 301.

questioned. As we look backward over the efforts since the war to educate the negro, the pity grows that more of the money flowing southward for such purposes could not have been turned into agricultural and industrial channels; not that formal learning is needed the less, but that better conditions, agriculturally and in the home, were and are needed the more.<sup>a</sup>

We are in the midst of a new and great interest in rural development, in farm life, in the achievements of science in agriculture. This has come along with, and perhaps partly as the result of, the rapid increase of facilities for intercommunication among the farmers themselves, and between them and the towns and cities of their localities. Rural free delivery gives the farmer his paper and other mail matter delivered daily at his door. A mesh of telephone wires is binding together the homes of our agricultural population; often a larger proportion of the farmers of a county have phones in their houses than have the residents of a city. Electric railway lines are threading their way past the doors of the country homes and increasing greatly the facilities for travel. The progress in farm economics is reflected in the modern residences and in more pleasant habits of life than have ever obtained before. The children and young people are receiving a better education; in several of our States a more practical and useful one also. Often they are carried in warm, dry vans to a consolidated school, where they have the advantages of a graded school, competent teachers, and a hygienic building. Consolidated schools are spreading as fast as many of the other educational advantages of recent introduction, and rarely has one been abandoned after having been tried.

There has long been a certain species of rather technical literature designed especially for the farmer, but the past three or four years have brought into existence magazines of gardening, country life, and farming, which are among the most attractive and handsome periodicals published in the country. Such associations of rural people as the well-known ones at Hesperia, Michigan, and at Topeka, Indiana, are becoming more and more common, by means of which the farming people are making marvelous changes in their condition through the medium of good lecture courses, circulating libraries, reading clubs, better homes, and better farms. There are large organizations, by no means fundamentally agricultural, which are now giving agricultural education the impetus of their encouragement. The Michigan Academy of Social Science maintains a section of agriculture, and the American Civic Association, the National Educational Association, and the American League of Industrial Educa-

<sup>a</sup> Dabney Charles W. Educational principles for the South. N. E. A. Report, 1904, pp. 235-241. Hill, W. B. The Morrill Bill & the Blair Bill. University of Georgia alumni bulletin v 5 no 1

tion, all stand for the spread of agricultural education, because of the consequent bettering of the condition of the rural people which will result.

That which seems at present to be the most hopeful sign of all, however, is the closer alliance of progressive agriculture with our system of elementary education. The teachers of rural schools are coming to attend the farmers' institutes, while the farmers, in turn, give closer attention to school conditions in their midst. In a number of instances the State universities and the State farmers' institutes are working hand in hand for the making of efficient men and women out of the country children. Of course this largely means an agricultural education, and we have seen at some length the value which such an education has proved to have at home and abroad. Wherever tried in the United States, whether in elementary or in secondary schools, it has more advocates to-day than ever before. More States are introducing it into their public school systems; where it is now a matter of local option, the farmers of counties adjoining those in which agriculture is taught are demanding a like education for their children. The offering of agricultural courses for teachers by normal schools and colleges reflects the demand for such instruction. Minnesota and Wisconsin have each within a year doubled the number of agricultural high schools receiving State aid. The Indian Service has established a strictly agricultural Indian school in Oklahoma. The bright spots in the South have been made such by agricultural education. The Macdonald Institute at Guelph, Ontario, marks a final step in advance by keeping the supply of thoroughly trained Canadian teachers abreast of the demand for instruction of this kind.

Just what the future shall bring along these lines, one may not even prophesy. But it seems certain that it is only a matter of time until agriculture will be taught in the rural schools of every State, until thorough secondary courses in scientific agriculture will be within the reach of all country children who may desire them, and until there shall obtain a correlated course of instruction from the rural school up through the college of agriculture, with abundant opportunity for graduate technical work for those ambitious to become experts.

#### SUMMARY.

Aside from the historical features of the foregoing study, its purpose has been to determine the advantages of nature study, of school gardens, and of an agricultural education. So far as experience has gone, it has shown that—

1. Nature study has already infused new life into our school system, and, when made a study of the relations of man to nature and

to its forces, it produces that great educational result, viz., the proper response of the individual to his environment.

2. Nature study, better than any other subject in the school curriculum, allows the teacher and the pupil to meet on the same plane and really to know and to understand each other.

3. The child himself becomes a life-long economic force in nature as soon as he learns to look at it with understanding eyes.

4. The ethical value of producing something can not be overestimated; in this lies the only road to altruism open to the child, as well as a guaranty of his respect for the products of others.

5. "The sentiments on which the highest religion rests are best trained in children on the noblest objects of nature."

6. Neither the educational, the ethical, nor the economic value of nature study overshadows its æsthetic value—its effect on the sentiments of the child. The psychological genesis of a genuine love of nature is the crowning result of nature study.

7. School gardens furnish to children the best possible means of giving expression to their thoughts through motor channels.

8. Children having the advantages of gardening do much better work as much as a third better in some cities, it is said—in their other studies than do other children in the same school.

9. School gardens teach, among other things, private care for public property, economy, honesty, application, concentration, justice, the dignity of labor, and love for the beauties of nature.

10. Nature study and school gardens serve better than other agencies to "cultivate the critical discernment of beauty and excellence in nature and in human nature," as President Eliot has pointed out.

11. School gardens have the advantage over all other school work of promoting the health of the child, especially in cases of incipient tuberculosis.

12. In a number of our larger cities school gardens have transformed districts in the slums, morally, socially, and æsthetically.

13. Although half of the school children of the United States receive all their instruction in the country schools, the education given them does not suitably prepare them for their life work.

14. Agriculture furnishes admirable subject-matter for many of the other school studies.

15. In rural schools where other forms of manual training are perhaps out of the question for the present, practical agricultural work supplies the motor training needed by all and essential to the motor minded.

16. In at least two foreign countries the introduction of agricultural education has raised the age of leaving school between two and three years, and the same effect is observable in some of our own

States. With this there is also an increased average attendance of the total school enrollment.

17. The economic value of an agricultural education is seen on every hand. It is this which has materially increased, and in many cases doubled or tripled, the amount produced by the same land, numerous instances of which may be seen in every State of our country. More patent still, it is such an education which enables the smaller countries of northern Europe to compete with our American farmers.

18. Agricultural education, and perhaps that alone, seems likely to prove the salvation of the South, and especially of the negro, who above all else needs to be given self-respect and a higher code of morality through self-support.

19. Practical ethics are best insured by making every citizen, at least potentially, a producer. For example, a small, well-managed farm school has proved more successful than any other means for reforming boys with criminal tendencies.

20. The study of agriculture has its important artistic side; the problems of the farm and of farming demand as true and as artistic expression of well-ordered thought as do the "arts and crafts," whose artistic value we have recognized ever since the work of Morris.

21. All these effects must bring a changed social status in their train. We have good reason to believe that one of the most important among them will be a lessening of the influx into the cities from the country, if not a setting of the tide in the other direction. This beneficent change is already under way in France and Belgium, and it is believed that giving the people an agricultural education has had its part in bringing this about.

22. An agricultural education, better than any other, makes men, enables one always to fall on his feet, fills him with a lasting confidence that in any stress of circumstances he can obtain a comfortable livelihood from the earth.

Finally, our rural communities need, and have a right to demand, a good, practical, scientific education in agriculture. This must come largely through secondary schools, since our agricultural colleges have assumed the important task of training agricultural experts. Nature study should be taught in conjunction with gardening in every school, and agriculture should form a part of the curriculum of at least every rural primary school. And I find myself, at the close of this study, in accord with Mr. Dick J. Crosby, the Government's expert in agricultural education, in his suggestion "that there should be in every township an efficient high school giving instruction not only along the lines now commonly found in high schools, but also in agriculture and home economics; and that townships

unable to support such schools be required to pay the tuition of their pupils in such high schools in adjoining townships." But at the same time it seems of great importance that the high school courses in agriculture be so full and complete as to lead to practical farming on the one hand and to higher work in the agricultural college of the State on the other; so that ultimately there shall be a thoroughly correlated system of instruction from the primary grades of the rural school on through the collegiate and graduate courses of our best agricultural colleges.

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## APPENDIX I.

### FORM EMPLOYED IN THE PROVINCE OF NOVA SCOTIA FOR THE RECORD OF NATURE OBSERVATIONS BY SCHOOL CHILDREN.

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[To be handed promptly on its receipt by the secretary of every school board to each teacher employed within the school section.]

#### LOCAL "NATURE" OBSERVATIONS.

This sheet is provided for the purpose of aiding teachers to interest their pupils in observing the times of the regular procession of natural phenomena each season. First, it may help the teacher in doing some of the "nature" lesson work of the course of study; secondly, it may aid in procuring valuable information for the locality and Province. Two copies are provided for each teacher who wishes to conduct such observations, one to be preserved as the property of the section for reference from year to year; the other to be sent in with the return to the inspector, who will transmit it to the superintendent for examination and compilation.

What is desired is to have recorded in these forms the dates of the first leafing, flowering, and fruiting of plants and trees; the first appearance in the locality of birds migrating north in spring or south in autumn, etc. While the objects specified here are given so as to enable comparison to be made between the different sections of the Province, it is very desirable that other local phenomena of a similar kind be recorded. Every locality has a flora, fauna, climate, etc., more or less distinctly its own; and the more common trees, shrubs, plants, crops, etc., are those which will be most valuable from a local point of view in comparing the characters of a series of seasons.

Teachers will find it one of the most convenient means for the stimulation of pupils in observing all natural phenomena when going to and from the school, and some pupils radiate as far as 2 miles from the schoolroom. The "nature study" under these conditions would thus be mainly undertaken at the most convenient time, without encroaching on school time; while on the other hand it will tend to break up the monotony of school travel, fill an idle and wearisome hour with interest, and be one of the most valuable forms of educational discipline. The eyes of a whole school daily passing over a whole school section will let very little escape notice, especially if the first observer of each annually recurring phenomenon receives credit as the first observer of it for the year. The observations will be accurate, as the facts must be demonstrated by the most undoubted evidence, such as the bringing of the specimens to the school when possible or necessary.

To all observers the following most important, most essential principles of recording are emphasized: Better no date, no record, than a wrong one or a doubtful one. Sports out of season due to very local conditions not common to at least a small field should not be recorded except parenthetically. The date to be recorded for the purposes of compilation with those of other localities should be the first of the many of its kind following immediately after it. For instance, a butterfly emerging from its chrysalis in a sheltered cranny by a southern window in January would not be an indication of the general climate, but of the peculiarly heated nook in which the chrysalis was sheltered; nor would a flower in a semi-artificial, warm shelter, give the date required.

When these sports out of season occur, they might also be recorded, but within a parenthesis to indicate the peculiarity of some of the conditions affecting their early appearance.

These schedules should be sent in to the inspector with the annual school returns in July, containing the observations made during the whole school year and back as far as the preceding July (if possible) when the schedule of the previous school year was necessarily completed and sent in.

A duplicate copy of the schedule of observations should be securely attached to the school register for the year, so that the series of annual observations may be preserved in each locality. The new register has a page for such records.

Remember to fill in carefully and distinctly the date, locality, and other blanks at the head of the schedule on the next page; for if either the date or the locality or the name of the responsible compiler should be omitted the whole paper is worthless and can not be bound up for preservation in the volume of *The Phenological Observations*.

By the aid of the table given at the top of pages 3 and 4, the date, such as the 24th of May, for instance, can be readily and accurately converted into the annual date, "the 144th day of the year," by adding the day of the month given to the annual date of the last day of the preceding month (April in this case), thus:  $24 + 120 = 144$ . The annual date can be briefly recorded, and it is the only kind of dating which can be conveniently averaged for phenological studies. When the compiler is quite certain that he or she can make the conversion without error, the day of the year instead of the day of the month will be preferred in recording the dates.

**PHENOLOGICAL OBSERVATIONS, CANADA.**  
(1906 SCHEDULE.)

For the year ending July, 1906.

Province..... County..... District..... Locality or school section..... No. ....  
The estimated length and breadth of the locality within which the following observations were made  
.... X .... miles. Estimated distance from the seacoast .... miles. Estimated altitude above the sea  
level.... feet.

Slope or general exposure of the region.....

General character of the soil and surface.....

Proportion of forest and its character.....

Does the region include lowlands or intervals?..... and if so, name the main river or stream..... Or  
is it all substantially highlands?.....

Any other peculiarity tending to affect vegetation?.....

The most central post-office of the locality or region.....

Name and address of the teacher or other compiler of the observations responsible for their accuracy.	When first seen.	When becoming common.
.....	.....	.....

(Wild plants, etc.—Nomenclature as in "Spotton" or "Gray's Manual.")

1. Alder ( <i>Alnus incana</i> ), catkins shedding pollen.....	.....	.....
2. Aspen ( <i>Populus tremuloides</i> ), "	.....	.....
3. Mayflower ( <i>Epigaea repens</i> ), flowering.....	.....	.....
4. Field horsetail ( <i>Equisetum arvense</i> ), shedding spores.....	.....	.....
5. Blood-root ( <i>Sanguinaria Canadensis</i> ), flowering.....	.....	.....
6. White Violet ( <i>Viola blanda</i> ), flowering.....	.....	.....
7. Blue violet ( <i>Viola palmata, cucullata</i> ), flowering.....	.....	.....
8. Hepatica (H. triloba, etc.), flowering.....	.....	.....
9. Red maple ( <i>Acer rubrum</i> ), flower shedding pollen.....	.....	.....
10. Strawberry ( <i>Fragaria Virginiana</i> ), flowering.....	.....	.....
11. " " " fruit ripe.....	.....	.....
12. Dandelion ( <i>Taraxacum officinale</i> ), flowering.....	.....	.....
13. Adder's tongue lily ( <i>Erythronium Am.</i> ), flowering.....	.....	.....
14. Gold thread ( <i>Coptis trifolia</i> ), flowering.....	.....	.....
15. Spring beauty ( <i>Claytonia Caroliniana</i> ), flowering.....	.....	.....
16. Ground ivy ( <i>Nepeta Glechoma</i> ), flowering.....	.....	.....
17. Indian pear ( <i>Amelanchier Canadensis</i> ), flowering.....	.....	.....
18. " " " fruit ripe.....	.....	.....
19. Wild red cherry ( <i>Prunus Pennsylvanica</i> ), flowering.....	.....	.....
20. " " " fruit ripe.....	.....	.....
21. Blueberry ( <i>Vaccinium Can. and Penn.</i> ), flowering.....	.....	.....
22. " " " fruit ripe.....	.....	.....
23. Tall buttercup ( <i>Ranunculus acris</i> ), flowering.....	.....	.....
24. Creeping buttercup ( <i>R. repens</i> ), flowering.....	.....	.....
25. Painted trillium ( <i>T. erythrocarpum</i> ), flowering.....	.....	.....
26. Rhodora ( <i>Rhododendron Rhodora</i> ), flowering.....	.....	.....
27. Pigeon berry ( <i>Cornus Canadensis</i> ), florets opening.....	.....	.....

Day of year corresponding to the last day of each month:

Jan.	31.	April	120.	July	212.	Oct.	304.	When first seen.
Feb.	59.	May	151.	Aug.	243.	Nov.	334.	
March	90.	June	181.	Sept.	273.	Dec.	365.	

For leap years increase each number except that for January by 1.

28. Pigeon berry ( <i>Cornus Canadensis</i> ), fruit ripe.....	.....	.....
29. Star flower ( <i>Trientalis Americana</i> ), flowering.....	.....	.....
30. Clintonia ( <i>Clintonia borealis</i> ), flowering.....	.....	.....
31. Marsh calla ( <i>Calla palustris</i> ), flowering.....	.....	.....
32. Lady's slipper ( <i>Cypripedium acaule</i> ), flowering.....	.....	.....
33. Blue-eyed grass ( <i>Sisyrinchium ang.</i> ), flowering.....	.....	.....
34. Twinflower ( <i>Linnaea borealis</i> ), "	.....	.....
35. Pale laurel ( <i>Kalmia glauca</i> ), flowering.....	.....	.....
36. Lambkill ( <i>Kalmia angustifolia</i> ), "	.....	.....
37. English hawthorn ( <i>Crataegus oxyacantha</i> ), flowering.....	.....	.....
38. Scarlet-fruited thorn ( <i>Crataegus coccinea</i> ), "	.....	.....
39. Blue flag ( <i>Iris versicolor</i> ), flowering.....	.....	.....
40. Ox-eye daisy ( <i>Chrysanthemum Leucanthemum</i> ), flowering.....	.....	.....
41. Yellow pond lily ( <i>Nuphar advena</i> ), flowering.....	.....	.....
42. Raspberry ( <i>Rubus strigosus</i> ), flowering.....	.....	.....
43. " " " fruit ripe.....	.....	.....
44. Yellow rattle ( <i>Rhinanthus Crista-galli</i> ), flowering.....	.....	.....
45. High blackberry ( <i>Rubus villosus</i> ), flowering.....	.....	.....
46. " " " fruit ripe.....	.....	.....

Day of year corresponding to the last day of each month:					When first seen.	When becoming common.
Jan. 31.	April 120.	July 212.	Oct. 304.			
Feb. 59.	May 151.	Aug. 243.	Nov. 334.			
March 90.	June 181.	Sept. 273.	Dec. 365.			
For leap years increase each number except that for January by 1.						
47. Pitcher plant ( <i>Sarracenia purpurea</i> ), flowering.....						
48. Heal-all ( <i>Brunella vulgaris</i> ), "						
49. Common wild rose ( <i>Rosa lucida</i> ), "						
50. Fall dandelion ( <i>Leontodon autumnale</i> ), "						
51. Butter-and-eggs ( <i>Linaria vulgaris</i> ), "						
52. Expanding leaves in spring made trees appear green—(a) first tree, (b) leafing trees generally.....						
<i>Cultivated plants, etc.</i>						
53. Red currant ( <i>Ribes rubrum</i> ), flowering.....						
54. " " fruit ripe.....						
55. Black currant ( <i>Ribes nigrum</i> ), flowering.....						
56. " " fruit ripe.....						
57. Cherry ( <i>Prunus Cerasus</i> ), flowering.....						
58. " " fruit ripe.....						
59. Plum ( <i>Prunus domestica</i> ), flowering.....						
60. Apple ( <i>Pyrus Malus</i> ), flowering.....						
61. Lilac ( <i>Syringa vulgaris</i> ), flowering.....						
62. White clover ( <i>Trifolium repens</i> ), flowering.....						
63. Red clover ( <i>Trifolium pratense</i> ), "						
64. Timothy ( <i>Phleum pratense</i> ), "						
65. Potato ( <i>Solanum tuberosum</i> ), "						
<i>Farming operations, etc.</i>						
66. Plowing begun.....						
67. Sowing "						
68. Planting of potatoes begun.....						
69. Shearing of sheep.....						
70. Hay cutting.....						
71. Grain cutting.....						
72. Potato digging.....						
<i>Meteorological phenomena.</i>						
73. Opening of (a) rivers, (b) lakes without currents.....						
74. Last snow (a) to whiten ground, (b) to fly in air.....						
75. Last spring frost (a) "hard," (b) "hoar".....						
76. Water in streams, rivers, etc. (a) highest, (b) lowest.....						
77. First autumn frosts (a) "hoar," (b) "hard".....						
78. First snow (a) to fly in air, (b) to whiten ground.....						
79. Closing of (a) lakes without currents, (b) rivers.....						
80. Number of thunder storms (with dates of each).....						

Jan. ...., Feb. ...., Mar. ...., Apr. ...., May ...., June ...., July ...., Aug. ....,  
Sept. ...., Oct. ...., Nov. ...., Dec. ....

Day of year corresponding to the last day of each month:					Going north or coming in spring.	Going south or leaving in fall.
Jan. 31.	April 120.	July 212.	Oct. 304.			
Feb. 59.	May 151.	Aug. 243.	Nov. 334.			
March 90.	June 181.	Sept. 273.	Dec. 365.			
For leap years increase each number, except that for January, by 1.						
<i>Migration of birds, etc.</i>						
81. Wild duck migrating.....						
82. Wild geese migrating.....						
83. Song sparrow ( <i>Melospiza fasciata</i> ).....						
84. American robin ( <i>Turdus migratorius</i> ).....						
85. Slate-colored snow bird ( <i>Junco hiemalis</i> ).....						
86. Spotted sand piper ( <i>Actitis macularia</i> ).....						
87. Meadow lark ( <i>Sturnella magna</i> ).....						
88. Kingfisher ( <i>Ceryle Aleyon</i> ).....						
89. Yellow-crowned warbler ( <i>Dendroica coronata</i> ).....						
90. Summer yellow bird ( <i>Dendroica aestiva</i> ).....						
91. White-throated sparrow ( <i>Zonotrichia alb</i> ).....						
92. Humming bird ( <i>Trochilus Colubris</i> ).....						
93. King bird ( <i>Tyrannus Carolinensis</i> ).....						
94. Bobolink ( <i>Dolichonyx oryzivorus</i> ).....						
95. American goldfinch ( <i>Spinus tristis</i> ).....						
96. American redstart ( <i>Setophaga ruticilla</i> ).....						
97. Cedar waxwing ( <i>Ampelis cedrorum</i> ).....						
98. Night hawk ( <i>Chordeiles Virginianus</i> ).....						
99. Piping of frogs.....						
100. Appearance of snakes.....						

(OTHER OBSERVATIONS AND REMARKS.)

## APPENDIX II.

### SYSTEM OF INSTRUCTION IN AGRICULTURE PLANNED FOR IRELAND BY THE DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION.

The success of the department of agriculture in developing and improving the agricultural industry in Ireland, and in creating an extended interest in the systematic study of agriculture, has attracted widespread attention. The principal features of the system of agricultural instruction maintained by the department are as follows: Itinerant instruction, agricultural schools and classes, the training of instructors and teachers, the maintenance of higher agricultural institutions, and experiment stations. The following particulars respecting these features are derived from the report of the department for 1905-6:

#### ITINERANT INSTRUCTION.

While recognizing that itinerant instruction could not prove a substitute for schools and colleges, the department believed that this system afforded the most effective means for bringing the knowledge of the latest applications of science to agricultural practice within the reach of farmers who could not be included within the scope of methods of teaching intended primarily for the younger generation. Itinerant instruction has, besides, the advantage of preparing the way for more extensive courses of teaching and of creating that genuine demand for agricultural education which is so essential to its success. The county committees of agriculture in the several counties have been practically unanimous in adopting the programme of itinerant instruction, so that in the year under review out of 33 administrative counties 31 adopted the scheme of instruction in agriculture; 27 counties made provision for instruction in horticulture; 25 adopted the scheme of instruction in butter making. The scheme of instruction in poultry keeping was adopted by every county committee with one exception.

The main branches of the work of the itinerant instructor in agriculture are the delivery of lectures to farmers at rural centers during the winter months, the carrying out of agricultural experiments and demonstrations, and the visiting of farms for the purpose of giving advice to farmers. During the year under review the instructors delivered 1,169 lectures, which were attended by 66,114 persons, the average attendance being about 56. The instructors also superintended the laying down of 2,082 demonstration plots, and instituted 439 experiments on the principal crops. The visits paid to farms reached the total of 8,394, representing an average of 365 for each instructor. As the visits are undertaken only at the request of the farmers concerned, their number affords an index to the place which the instructor fills with reference to the agricultural industry of the county where he is employed. A considerable portion of the instructor's time is occupied in affording advice to farmers by letter, a course which is adopted when a personal inspection of the farm is unnecessary or not feasible at the moment. \* \* \*

The instructors were also employed during the summer months as judges under the scheme of prizes for cottages and small farms.

## AGRICULTURAL SCHOOLS AND CLASSES.

Agricultural schools and classes were maintained during the year under review in 23 centers as compared with 16 in the previous year.

In 4 counties where the scheme of itinerant instruction in agriculture had been in operation for several years, the courses were given by the itinerant instructors, whose ordinary lecture work was correspondingly reduced. Elsewhere special teachers of agriculture were provided by the department. The arrangements in connection with the courses varied somewhat from county to county according to the circumstances of each county. \* \* \* Instruction in veterinary hygiene was provided wherever the services of a veterinary surgeon could be obtained.

The agricultural classes were held on two or three days in each week at the several centers. Instruction on five days in each week was given in Monaghan and at Downpatrick, where the winter schools alluded to in former reports were reopened for sessions of twenty weeks. The school at Monaghan is provided with a laboratory which gives facilities for experiments in chemistry and physics explanatory of the agricultural course.

The several winter schools and classes above mentioned were administered in conjunction with the county committees of agriculture. Agricultural education was also provided for at the college of the Franciscan Brothers at Mount Bellew, County Galway, where two courses of twenty weeks and twenty-one weeks, respectively, were held. This college does not receive any assistance from the funds administered by the county committees, but the department makes direct grants toward the payment of teachers and the provision of equipment for the agricultural course. \* \* \*

It is interesting to note in connection with these classes that in some instances the students have, on leaving the class, formed themselves into associations for the discussion of agricultural topics and for the dissemination of information among the members. These associations are open also to farmers who had not attended the classes. The associations keep in touch with the itinerant instructors in agriculture and with the teachers of agricultural classes in their counties, and the members are often able to render valuable aid in the carrying out of the agricultural experiments, in which they take a keen interest. In one county the association has provided a collection of books on agricultural subjects for circulation among the members, and it is probable that the example will be followed in other counties. \* \* \*

## SCHOOLS OF RURAL DOMESTIC ECONOMY.

Schools of rural domestic economy for the instruction of girls of the farming class in subjects appertaining to rural life were in operation during the year at Portumna, County Galway; Westport, County Mayo; and Loughglynn, County Roscommon. The course included dairying, poultry keeping, gardening, household management, cookery, laundry work, and needlework. At Portumna and Westport two distinct sessions, each of about five and one-half months' duration, were held, and the schools were open to day pupils, who are admitted without fee, and also to resident pupils, who pay a fee of £3 3s. per session. At Loughglynn only day pupils are received, and arrangements are made whereby the instruction given can be availed of by housewives of the district as well as by the girls and young women. No fees are charged; but those attending the lessons are expected to bring with them to the school the materials required for practical instruction. The total attendance during the year was: Portumna, 30 resident and 56 day pupils; Westport, 10 resident and 75 day pupils; Loughglynn, 97 day pupils. \* \* \*

## TRAINING OF TEACHERS.

Although one of the first acts of the department was to make provision for the training of instructors, it has not been found possible to keep pace with the constantly increasing demand, and some counties, consequently, were unable to obtain instructors during the year 1905-6.

The training of instructors and teachers at the Royal College of Science, the Albert Agricultural College, Glasnevin, and the Munster Institute was continued as in former years, and 27 students who completed during the year their courses at these institutions were passed as qualified for appointments.

The number of itinerant instructors at work in the year 1905-6 would have been somewhat larger were it not that several students who completed their training in 1905 had to be retained for the new educational institutions which the department put into operation during the year. \* \* \*

## ROYAL COLLEGE OF SCIENCE.

The teaching staff of the college at present consists of 8 professors, 5 lecturers, and 10 assistants, and the subjects of instruction are: Chemistry, physics, mechanical engineering, agriculture, mathematics, zoology, botany, and geology. The Albert Agricultural College, Glasnevin, is used in connection with the instruction in agriculture in the Royal College of Science. The course in the agricultural faculty extends over a period of three years, and is intended to enable the students to qualify for employment as itinerant instructors in agriculture, or as teachers of agriculture in the department's schools, or at the classes established at rural centers under the scheme of winter agricultural classes. In all, 29 students who took out this course are at present so employed. Thirty students are in attendance at the current 1906-7 session. \* \* \*

The department offer annually for competition among the sons of farmers valuable scholarships, tenable at the college, which enables students to take out, free of expense, the full course in the agricultural faculty. Ten new scholarships were awarded for the session 1905-6 in addition to 25 scholarships gained in previous years, which were renewed for that session. The programme of the examination for these scholarships is particularly suitable for farmers' sons who have received a good secondary education and have since leaving school engaged actively in the work of the farm. If in addition they have gone through a preliminary course in technical agriculture, such as is provided at the Albert Agricultural College, Glasnevin, their prospects of securing scholarships are much improved. Special emphasis is laid on the actual experience of farm work required to qualify a candidate for the award of a scholarship, proficiency in practical agriculture being taken into account in the case of those who may be deficient in some of the other subjects of the examination. This practice insures that the successful candidates possess, in their practical experience, an adequate foundation for the instruction in agricultural science which they will receive at the college. \* \* \*

In addition to the scholarships that will be offered to students in agriculture, the department propose to award in 1907 one or more scholarships of similar value to students who desire to specialize in forestry, horticulture, or creamery management. Candidates for these scholarships will be subjected to the same test as candidates for scholarships in agriculture, with the exception that an examination in horticulture, forestry, or creamery management will be substituted for that in practical agriculture.

The number of students in the agricultural faculty at the close of the session in June, 1906, was—

First year.....	10
Second year.....	13
Third year.....	11
Total.....	34

\* \* \* The college is maintained by an annual Parliamentary vote, the students' fees being appropriated in aid of the vote. Special provision is made at the college by means of scholarships, short summer courses, and otherwise for the training of teachers in science and technological subjects and in agriculture. During the session 1905-6 23 students qualified for the diploma of associate. The average number of students who attended the college during the five years from 1901-2 to 1905-6 was 123.

The short summer courses of instruction for teachers are held at the college, among other centers, during the summer vacation, and are designed to enable teachers of experimental science under the department's regulations to gain additional knowledge and skill and to improve their general efficiency. The summer courses held at the college during the year 1906 were attended by 162 teachers.

#### ALBERT AGRICULTURAL COLLEGE.

The course for agricultural students at the Albert Agricultural College, Glasnevin, has been extended to cover a period of eleven months, and the practice of holding two distinct sessions in each year has been discontinued. The 25 scholarships of £15 each, formerly awarded in connection with the examination for entrance to the summer session, were replaced by an equal number of scholarships of the value of £25 each, covering the extended session of eleven months. The scholarships were formerly divided in fixed proportions between the candidates from the several provinces. This rule was also altered, and all the scholarships offered in connection with the 1905-6 and 1906-7 sessions were open to candidates from any part of Ireland.

The increased duration of the session allows of a more thorough course being given. More time can be devoted to improving the general education of the students, while their presence at the college during almost the entire year enables the programme of instruction in technical agriculture to be arranged so as to deal in proper season with the several classes of farm operations. \* \* \*

The number of students in attendance at the college during the year was as follows:

Agricultural course.....	34
Horticultural course.....	13
Royal College of Science students.....	10
Special creamery students.....	2
Special course in forestry and bee keeping.....	36

#### MUNSTER INSTITUTE, CORK.

The Munster Institute fulfills for female students the same function as that discharged by the Royal College of Science and Albert Agricultural College in respect of male students. The course of instruction embraces the subjects in which a girl of the farming class needs to be proficient, either for the performance of the work of her own home or for the discharge of the duties which may be allotted to her if she obtains employment in a dairy or a creamery. The course covered in two sessions, of about twelve weeks each, is sufficient to give such students the dexterity in their work and the understanding of its principles which go to make a useful and intelligent worker. The training of such workers is the chief aim of the instruction given at the institute, but in addition it provides for the training of those who possess the skill in practical work and the ability to impart instruction which fit them to act as itinerant instructors in poultry keeping or butter making, or as teachers in the schools of rural domestic economy which are being established with the aid of the department. For those who are likely to prove suitable for such employment an additional course extending over three or four sessions is provided, according to the student's proficiency.

Four sessions were held at the institute during the twelve months ended September 30, 1906. The total attendance thereat amounted to 190.

Eleven students who had passed the June examinations at the Irish Training School of Domestic Economy and obtained certificates of qualification to teach domestic economy under the schemes administered by the technical instruction branch of the department were admitted to a special course at the summer session at the institute. As these students intended to seek appointments in rural districts, the knowledge derived by attendance at a course of instruction in the work peculiar to such districts should prove of great assistance to them in their future career as teachers.

The demand for admission to the institute continues unabated. The number of names enrolled on the register of applicants on September 30, 1906, was almost 250, the figure recorded in the last annual report. \* \* \*

#### AGRICULTURAL STATIONS.

Agricultural stations are situated at Athenry, County Galway; Ballyhaise, County Cavan, and Clonakilty, County Cork, where suitable farms have been acquired by the department. The last annual report mentioned that accommodation was being provided at these stations for the reception, as farm apprentices, of young men intending to become farmers, who would be provided with a course of practical training calculated to fit them for their future career. \* \* \*

During the year an additional school of rural domestic economy was inaugurated at Westport, and arrangements were concluded for the opening of further schools of this nature at Ramsgrange, County Wexford, and Claremorris, County Mayo.

A special course of instruction in forestry and bee keeping was given at the Albert Agricultural College, Glasnevin, to county instructors in horticulture and to the students of this subject in attendance at the college. Some county instructors in poultry keeping, who had not previously received special training in the fattening of poultry, were allowed short courses in this subject at Avondale poultry station.

The purpose of the department to keep clearly in view the relation between the industrial arts, which it fosters, and the higher orders of scientific instruction and research, is indicated by a memorandum recently drawn up at the request of the Royal Trinity College, Dublin, and the University of Dublin.

In this memorandum the department expressed their strong desire that the college should be connected with the university system, and they added that "whether the system to be ultimately established is to take the form of a single federal university for all Ireland, with constituent colleges, or whether there is to be more than one university in the country, they feel that it would be practicable to arrange for an effective connection of the kind in either case, and that such arrangement will be of great advantage to the university system in Ireland as well as to the higher technical instruction which it is a special function of the Royal College of Science to provide."



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# THE AUXILIARY SCHOOLS OF GERMANY

SIX LECTURES BY B. MAENNEL

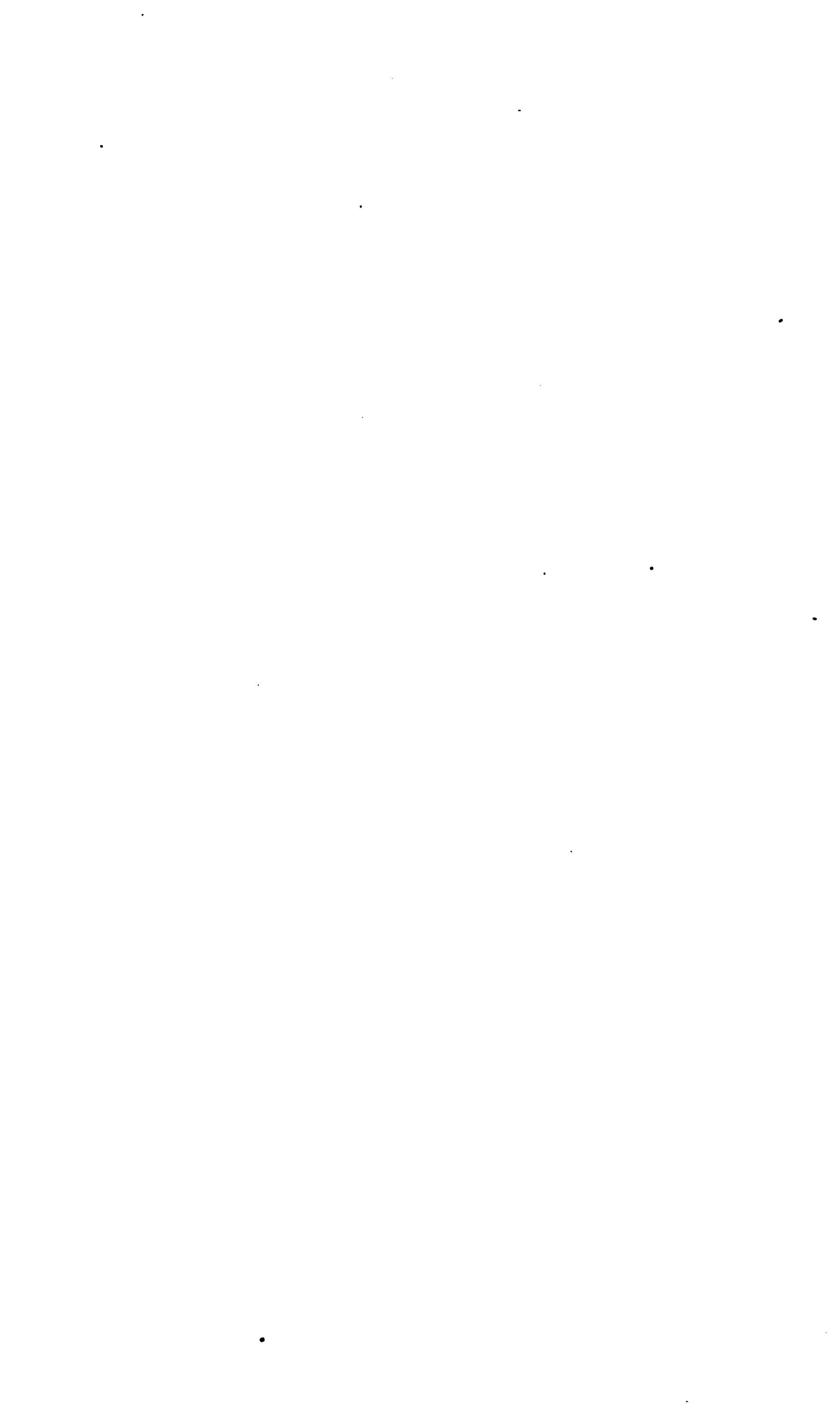
Rector of Mittelschule in Halle a. d. Saale

TRANSLATED BY FLETCHER BASCOM DRESSLAR

Associate Professor of the Science and Art of Teaching  
in the University of California



WASHINGTON  
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## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,

BUREAU OF EDUCATION,

*Washington, October 12, 1907.*

SIR: I have the honor to transmit herewith a translation, prepared at my request by Professor Dresslar, of the University of California, of a recent account of the auxiliary schools (*Hilfsschulen*) of Germany, and to recommend its publication as an issue of the Bulletin of the Bureau of Education.

The problem of proper provision for exceptional children, and especially for backward children, in our great city systems of schools, has long been recognized as one of great importance. It has to do not only with the welfare of the children immediately concerned, but with that of all other children in the same schools; for the necessity of devoting extraordinary care and attention to a few backward members of the class not infrequently prevents the teacher from giving due care and attention to the larger number of normally endowed members. For both reasons, our city school authorities within the past few years have devoted much attention to ungraded classes and other special provision for these exceptional children.

It is believed that an account of a parallel movement in Germany, where it has had a longer history and has reached a more advanced organization, will be of use to those who are furthering this movement in America. No one will suppose that German experience may be fitted without modification into an American situation. Our people welcome educational suggestions from abroad as they welcome desirable immigrants. They recognize them as capable of naturalization, with something good to offer that we did not have before. In the second or third generation, if not earlier, these newcomers become American through and through. Having a vigorous native stock to begin with, we can exercise such hospitality with all freedom, and in it lies the hope of a great enrichment of our national life.

The lectures of Doctor Maennel here presented in free translation, together with his bibliographies, constitute the best account which I have yet seen of this phase of German education, and as such I believe the publication will be widely useful in this country.

Very respectfully,

ELMER ELLSWORTH BROWN,

*Commissioner.*

The SECRETARY OF THE INTERIOR.



## NOTE BY TRANSLATOR.

The translation of "Vom Hilfsschulwesen" <sup>a</sup> here presented is not a strictly literal one; but it is hoped that the essential facts and arguments have suffered no serious distortion nor inadequate expression. There are doubtless errors, but some are almost unavoidable by reason of the involved style of the author and the nature of the subject-matter under consideration.

Special mention is due Miss Ida E. Hawes, M. A., reader in the department of education of the University of California, for much critical and willing help in making the translation. I have profited also by the criticism of my colleagues, Prof. Alexis F. Lange, of the Department of Education, and Clarence Paschall, M. A., instructor in the department of German, and by that of Dr. Louis R. Klemm and Mr. F. E. Upton, of the U. S. Bureau of Education.

F. B. DRESSLAR.

BERKELEY, CAL., January 24, 1907.

<sup>a</sup> The original work is entitled "Vom Hilfsschulwesen: Sechs Vorträge von Dr. B. Maennel, Rektor. Druck und Verlag von B. G. Teubner in Leipzig, 1905." 140 p. D. cloth. It forms the 73d volume of the series, "Aus Natur und Geisteswelt. Sammlung wissenschaftlich-gemeinverständlicher Darstellungen." The work is dedicated to W. Rein, Ph. D., Litt. D., professor of pedagogy in the University of Jena.



## AUTHOR'S PREFACE.

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These lectures on auxiliary schools were delivered from the 4th to the 10th of August, 1904, in the Ernst Abbe Volkshaus at Jena, as one of the vacation courses given there. Upon invitation of the publishers, they are here presented to the public in an expanded form.

May they serve to convince the reader that a due estimation of those children whom an unfortunate destiny has treated in a stepmotherly fashion in various ways, is not only needful for the friend of new methods in the theory and practice of child study and education, but also for all those who ought to stand for the welfare of the people.

If the new helpers in counsel and action among school people, physicians, ministers, jurists, and all friends of the people, are won over for the good cause, the following work will have served its purpose.

B. MAENNEL.

HALLE, April, 1905.



## THE AUXILIARY SCHOOLS OF GERMANY.

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### I. -HISTORICAL SKETCH.

The beginnings of auxiliary schools for defective children date from the middle of the past century. These beginnings were not called auxiliary schools, but auxiliary or assisting classes. The first auxiliary class was established at Halle, in Prussian Saxony. In the minutes of the meeting of the school board, held on the 28th and 29th of September, 1859, is found the following proposal of Mr. Haupt, then principal of one of the schools: \* \* \* "to form a special class for defective children, now numbering 17, with possibly two hours for instruction" \* \* \*. This proposal the city school administration carried into effect, directing a teacher from a folk school to give instruction for two hours daily to those children who from any cause were not making progress in the folk school. Quite a period of time passed by, however, before this new plan of instruction obtained daily in a single room for a class made up of children from the schools for the poor and from the folk schools, and finally included twenty hours of work per week. Still, the credit of founding the first auxiliary class is to be conceded to Principal Haupt, who died in 1904, after long and effective service as privy councillor and school superintendent at Merseburg.<sup>a</sup>

Meanwhile there was given to the project at Halle, which had been undertaken offhand and with only practical ends in view, a theoretical and more general foundation. K. F. Kern delivered in 1863 before the pedagogical society of Leipzig his lecture on the education and care of defective children, in which he set forth as generally desirable the establishment of special schools for such children of the folk schools as could not keep pace with other children. Th. Stötzner published in 1864 the first pamphlet bearing on auxiliary schools, giving it the title: "On schools for children of deficient capacity. First draft of a plan for the establishment of the same." This little book of 43 pages contained, in the first and theoretical part, an urgent appeal to all school authorities of the larger cities to establish auxiliary schools, through which deficient children, who for the most part later become burdensome to the community, may be developed into

<sup>a</sup> Chemnitz followed with the establishment of her first auxiliary class in 1860.

useful citizens through suitable teachers and properly adapted instruction. Stötzner established, in cooperation with Kern, in 1865, on the occasion of the meeting of the general German teachers' association at Leipzig, a section for pedagogical hygiene, and also in the same year founded a short-lived society for the advancement of the education of mentally deficient children, with Hanover as a meeting place.

It is noteworthy, however, that these Kern-Stötzner suggestions and appeals became effective in Dresden before they did in Leipzig. In the year 1867 the school board of Dresden brought about the establishment of an auxiliary class for 16 mentally deficient children. During the seventies Gera and Elberfeld established their special classes, while Brunswick and Leipzig first instituted similar school organizations in 1881. In the ensuing rivalry of other municipal governments not to be behindhand in organizing separate auxiliary classes or entire auxiliary schools, the capital city of the Empire took no part. While entire municipal congresses, as, for example, that of Thuringia, held at Ilmenau in 1893, earnestly recommended the organization of special auxiliary classes for mentally deficient children, the school board at Berlin declined to maintain auxiliary schools. As appears from two expositions which the *Zeitschrift für Schulgesundheitspflege* published in 1900 and 1901, and according to the statements of P. v. Gizecki, of Berlin, in 1903, the establishment of auxiliary schools was avoided, and instead auxiliary classes were organized in 1898 for the weak ones among the pupils of the common schools. To these classes those children of the common schools are assigned who can not on account of mental or bodily deficiency take part with success in the regular programme of instruction. The instruction in the special classes is designed to so advance the children that they may either become qualified for regular school work or acquire whatever preparation they are capable of for the needs of later life.

Why they could not make up their minds to establish independent auxiliary schools is made clear by the official report of the Berlin city authorities for the year 1898-99, which contains the following: "A considerable number of cities have sought to attain this philanthropic object by the establishment of special schools (auxiliary schools). We have not undertaken this for two reasons: In the first place, the distances to school would become too great; but in the second place, the definitive assignment of children to such a school would place upon them the stamp of inferiority for all time, and often prematurely. We follow the plan of retaining the child as a pupil in his own district, of placing him for instruction in small classes, and of bringing him back into association with the other children as soon as possible. While we now begin special instruction

with the children of the lowest classes, our plan is, step by step and according to the quality of the pupils, to add to the lowest auxiliary class a higher one, and so on, but always with the purpose of replacing the special instruction as soon as possible by the regular." No class of this kind contains more than 12 children, and the number of periods of instruction amounts to 12 per week. Commonly there are put into the special classes only such children as have attended the school of the district for a period of two years without progress. The fixed purpose of the school management of Berlin, i. e., the return of the children from special instruction back to the regular schools, has seldom been accomplished. Thus in the year 1903, out of the 91 special classes with 755 boys and 547 girls, only 36 boys and 29 girls were returned to the regular schools; in consequence of this, practical needs alone necessitated the development of the system of special classes on the plan of the organized auxiliary schools of other German cities. Several special classes were concentrated with that object in view and organized into grades, so that already in the year 1903, according to the statements of P. v. Gifycki, all the 91 special classes were distributed among 41 schools, and it is to be hoped that Berlin will proceed further in this organization, thus abandoning a position which hitherto no other city has thought worthy of imitation.

It is of note also that the royal Prussian educational department has not considered the above-described Berlin educational organization as worthy of recommendation. This central authority has, on the contrary, put the stamp of its approval on that which has been built up at Halle and in many other German cities. Indeed, with particular sympathy for and regardful appreciation of what had been done, it formulated regulations giving shape to the system of auxiliary schools in Prussia, after it had realized how valuable and essential a development of these new schools is to the state. "Das Zentralblatt für die gesamte Unterrichtsverwaltung in Preussen" furnishes gratifying information concerning this movement. In the first place, a circular of the minister, under date of the 27th of October, 1892, criticised the arrangement in vogue, especially in cities with great systems of folk schools, of so-called "finishing classes" for those children who, from any cause, were not able to reach the standard of the folk schools. Next, on the 14th of November, 1892, an investigation was made of such classes of this kind as had already been established in the different provinces for children of school age not normally endowed. The publication of the results of this investigation was accompanied on June 16, 1894, by an ordinance establishing briefly nearly all those points needed in the further development of auxiliary schools. The minister already discriminates in this between those children neglected at home and those deficient in natural endowment. Only such

of the latter as, "during one or two years of attendance on the folk school, have shown that, while they are capable of instruction, they are not sufficiently endowed to work in cooperation with normal children, are particularly indicated as needing special educational provision. The cooperation of the physician in the assignment of children who should be so provided for is of special importance, inasmuch as physical deformities and former illnesses go hand in hand with backward mental development. Besides, the records of the development of individual children, such as have been repeatedly made with discriminating carefulness, are of great value." Moreover, it was further suggested that in many of the larger cities means are now supplied to the end that not more than 25 pupils need be put into one class, and by means of proper salaries, in addition to the regular budget, excellent teachers of both sexes from the folk schools can be secured for the work in the auxiliary classes. The latter designation, viz., auxiliary classes (*Hilfsklassen*), for subnormally endowed children, "seems to be regarded as the most suitable, in view of the feelings of the parents concerned, and to be the one most often used." Finally, the minister recommends that instruction be given these classes for half an hour, that the standard of attainment be set considerably lower for all such classes than for the corresponding classes in the folk school, indeed, that the prescribed work for the highest auxiliary class should not be more difficult than that for the middle class of the regular folk school, and that special consideration be given to such subjects as will develop bodily dexterity and practical skill.

The decree of the Prussian minister of April 6, 1901, supplies again a detailed account of the then-existing school provision for subnormally endowed children of school age. It was a cause of satisfaction to him to know that at that time, in 42 cities of the monarchy, there were 91 such schools, enrolling 4,728 children in 233 classes. In respect to the question concerning the auxiliary school physician, the following declaration is made: "The cooperation of the physician is indispensable in these classes. I can only express a lively wish, that by the time the next report is made, no auxiliary school will be found unprovided with the regular aid of a physician." In regard to transferring individual children from the auxiliary school into the folk school, the minister in the same report says: "In certain places older children are put back into lower classes of the folk school. This ought to be avoided. For the difference in age between children so transferred and their younger classmates produces the very difficulties which the auxiliary classes are designed to prevent, and they would soon go out into life from the lower classes with an education inadequate to earning a livelihood."

Thus far the activity of the Prussian ministry of education touching the development of instruction in auxiliary schools has gone. It has on the one hand approved of what already exists, and on the other has stimulated the creation of that class of schools.<sup>a</sup> The teacher of a Prussian auxiliary school can congratulate himself on the point of view taken by the state authorities. Whenever a superior authority has faith in the insight and generosity of the larger communities, and in the zeal and devotion of all those who labor for the cause of auxiliary schools, then this cause will make better progress than when individual initiative is smothered by legislative pre-scription. So far as I know, the Prussian central authority has issued no coercive and narrowing regulations whatsoever. At present certainly its concern is merely to collect information regarding the measures that have been taken and recommend them for general adoption if found worthy of approval.

The other German states soon copied the praiseworthy example set by Prussia; many of them, as the kingdom of Saxony and others, entered simultaneously upon this work, the majority followed. The summary appearing in the minutes of the fourth session of the national association, and the proceedings relating to the foundation of auxiliary schools in Germany, published in the "Hilfsschule," give the particulars concerning the provision made by German municipalities for pupils of weak endowment. This provision has reached such a point, according to a report in the school journal (*Schulblatt*) of Saxony of January 11, 1905, that there are at this time in Germany 180 cities giving instruction in auxiliary schools to 492 classes enrolling 5,868 boys and 4,753 girls. Including Berlin, we may say that there are in Germany 583 classes, enrolling 6,623 defective boys and 5,300 defective girls.

The formation of the principals, teachers, and promoters of auxiliary schools into associations is to be welcomed as a gratifying outcome of the lively interest taken in this class of schools in Germany. Not only did some of the pioneers in this field in 1898 form themselves into a national association of auxiliary schools with Doctor Wehrhan, city superintendent of Hanover, as president, but the auxiliary school teachers of individual provinces, smaller civil divisions, and neighboring cities also organized themselves into associations. In these associations the work of the auxiliary school finds a steady encouragement, and everyone who serves the cause finds therein incitement to futher service.

<sup>a</sup> While this was in press a further report (Jan 2, 1905) appeared, which recounts with approbation the attainment during the meanwhile of what was hoped for in the earlier official documents.

Discussions on various subjects in this field are printed in the general pedagogical press and in publications specially devoted to auxiliary school affairs. To the latter are to be added the oft-mentioned proceedings of the sessions of the national association, the "Zeitschrift für die Behandlung Schwachsinniger und Epileptischer," the "Kinderfehler" (the organ of the movement in Germany for auxiliary schools), the "Zeitschrift für pädagogische Psychologie und Pathologie," the collections of dissertations from the field of pedagogical psychology and physiology, contributions to pedagogical pathology, the "Hilfsschule," and the newly founded "Eos," a quarterly journal for the knowledge and treatment of abnormal youth. Besides these, there is an extensive independent literature on the subject, so extensive, indeed, as to require a reliable bibliographical guide.

But the movement for auxiliary schools has won a foothold in other countries. According to the "Zeitschrift für Schulgesundheitspflege," the special schooling of meagerly endowed children was first considered in Austria in 1895. At that time, in pursuance of a regulation of a Vienna district school board, these children were sought out in the folk schools and "burgher" schools, and not only instructed in auxiliary classes, but a special department of instruction was organized for defective children of school age. In the year 1902 the organization of the association for the care of meagerly endowed children was planned; this union is striving to bring about a closer connection between the existing schools of this kind, as well as the further establishment of such institutions in the city, country, and community, and, moreover, devotes itself to the care of those dismissed from school and those in need of legal protection. But, on the whole, the Austrian school provision for deficient children is yet on a very low plane. "Austria has only half as many classes for deficient children as the city of Hamburg. The great majority of her abnormal children are without any instruction at all or remain as a burden upon the general folk schools."

According to an account in the quarterly journal "Eos" in 1905, the Kingdom of Hungary is also beginning to take an interest in the partially abnormal child. However, since that time only one independent auxiliary school, with several special classes, at Budapest, has been reported. But it is to be hoped that the Commission for School Hygiene will actively engage in organizing them and that the admirable views urged by its chairman, Dr. A. v. Náray, of Szabó, concerning the special scientific training of teachers for them will produce their desired effect, so that a sufficient number of auxiliary schools for the subnormally endowed may be established in Hungary.

In Switzerland auxiliary classes have existed since 1888. Basel and Bern each claim the credit for first establishing special instruc-

tion for subnormally endowed children in the Cantons. But they did not long continue alone in this work. A great number of other cities soon followed their example, so that by 1903 there were as many as 53 auxiliary classes in Switzerland, enrolling 1,096 children. In these classes 55 teachers (12 men, 43 women) were giving instruction. In order that they might secure as much uniformity as possible in the development of auxiliary schools, the Swiss Public Welfare Society (*Schweizerische Gemeinnützige Gesellschaft*) determined in 1898 to establish a course of instruction for teachers of special classes. This plan was realized, and the course was given in the first quarter of the school year 1899-1900 at Zurich with marked success.

In Italy there are at the present time no regular auxiliary classes. In several of the larger cities of the Kingdom, however, the backward pupils of the elementary schools are grouped together under the instruction of a woman teacher. The national association for the care of weak minded children, which was organized in 1898, had in mind, among other things, to urge that instruction in auxiliary classes be given in connection with the regular elementary schools. All pupils who were not too far below the normal in mental ability were to have in these classes instruction within their power of comprehension. According to K. Richter's account, there was founded at Rome in the year 1900 a kind of teachers' seminary, where teachers of both sexes might be made familiar with the treatment of defectives and with the means to serve and care for them. Independent of the above-mentioned national association, an asylum school for poor children of weak minds was started at Rome in 1899 by Dr. Sante de Sanctis, a university professor. This school offers a day home to about 40 pupils. The preceptress, who is an elementary school-teacher, works under the direction of the founder, a prominent psychiatrist. A teacher for training the children to speak normally, one for physical training, and one for music cooperate with her in this work. However, from the report of this institution made on April 16, 1903, and also from a letter written by the amiable and enthusiastic director concerning the management, it is learned that no programme of studies is regularly carried out. Since the so-called medico-pedagogical method prevails in this asylum school, more weight is given to medical and general educational considerations in conducting it than to formal school instruction. It is not in place here to pass judgment on the scope of the work of Prof. Sante de Sanctis, also described by K. Richter, or upon its practicability and results. It may be said in passing that as compulsory school attendance obtains only up to the tenth year of age, it is plain that it will require much persistent labor before even the general aims of the national association, the aims had in view by the philanthropic and intellectually superior circles in Italy, can be even approximately attained.

In France they are not yet fully convinced of the great value of a general treatment for weakly endowed children. To be sure, according to Dr. J. Morin in the Parisian journal, *Foi et Vie*, of November 16, 1904, Séguin, J. Bost, and Bourneville have made investigations, respectively, upon the mental, moral, and social capabilities of defectives; but aside from the reports on the medico-pedagogical method which is employed at Bicêtre, near Paris, I know nothing of schools for weak-minded children in France. The complaint of the author of the essay "Pour les enfants anormaux" in the "Manuel général de l'instruction primaire" for 1904 is therefore warranted when he says: "The most autocratically ruled States of Europe have made instruction democratic, and have opened schools for all their subjects, in which nervous, deaf and dumb, or idiotic, as well as healthy children, can be instructed. With us the opposite is the case; while our scholars were the first to point out the means to alleviate the natural defects of mankind, the teaching of abnormals has become so exclusive that the families concerned are often compelled to permit their children to grow up as chance wills. Oh, you poor creatures, predestined to remain unarmed in the struggle for existence."

Russia, Germany's eastern neighbor, also knows nothing of auxiliary classes. In St. Petersburg there has been, so far as can be learned, since 1882 a medico-educational institution managed by Doctor Maljarewski. Here are received idiots and feebly endowed children from wealthy circles. Another institution at St. Petersburg, maintained by the religious "Order of the Mother of God" and aided by the empress dowager, receives, it is said, epileptic and idiotic children from homes of poverty, and has been giving to them since 1903 school instruction also.

Richer and more positive, comparatively speaking, are the reports from Sweden. According to the Swedish Teachers' Journal of December, 1904 (Die schwedische Lehrerzeitung), Stockholm will establish this year auxiliary classes in the folk schools. The folk school teachers of the Swedish capital have, since 1900 and 1901, directed the attention of the school authorities to those "abnormal children who are hindered in their development," and pointed out the necessary methods of instruction for such children. At the same time it was shown by Dr. G. Hellström that of the 25,089 pupils of the folk schools in Stockholm, 87, or 0.35 per cent, were foolish, and 473, or 1.88 per cent, were backward. The superior authorities of the municipal folk schools have determined, in cooperation with the folk school teachers, to establish during the next year a number of auxiliary classes for backward children, in each of which the number of children shall not exceed 12. The children must have attended school from two to six terms ("Termine") without making progress, and can be admitted only after a medical examination. Instruction, which is

not to exceed four hours daily, is to be imparted by women teachers who volunteer to do this work.

According to private information, auxiliary schools have been established after the fashion of German models at Christiania, Bergen, and Trondhjem, in Norway. Copenhagen in Denmark has had an auxiliary school since 1900. We learn from the account of a journey made by Schenk in Holland and Belgium in 1900, and published in the "Kinderfehler," of the auxiliary school system in these countries. He explains to the reader how actively, especially on the part of physicians, they are meeting the educational needs of their abnormal children.

Similar things can be said of England. Here the auxiliary school system has been developed almost exactly according to the German model. A so-called "permissive act" of the year 1899 puts the matter in the hands of communities, who at their pleasure do or do not adopt the statutory regulations for auxiliary school instruction. The adoption of the provisions of the law makes it binding upon a city "to place the auxiliary schools founded by it under the supervision of State authorities, but it thereby obtains a share in State aid, paid according to the report of the inspector." One of the most important provisions of the law is the rule for compulsory school attendance up to the sixteenth year of age.<sup>a</sup> The English auxiliary schools have from one to three classes; women teachers give instruction in them. The first school for the instruction of subnormally endowed children was opened in London in the year 1892. Their number so increased that in 1903 there were 60 schools with 3,063 pupils. Nevertheless this number is not considered at all adequate: for within a short time almost as many more schools will be established, so that more than 5,000 children will be enrolled. But London, with perhaps 9,000 or 10,000 defective children to care for, is not alone in taking advantage of the permissive act; a great number of cities are following the lead set by the capital city in the care of mental defectives, and in the year 1903 at Manchester an auxiliary school association was formed after the German type, to whose work belongs also the care of physically defective children.

A plan for auxiliary schools in the United States was formulated about the same time that one was in England. Up to the year 1894, mentally backward children in the regular public school classes were treated just as children spoiled by neglect. Both classes were sent to so-called disciplinary schools. But when the character of minor

<sup>a</sup> The legal requirements for schools for defective and epileptic children in England provide that "no child may be admitted at less than 7 years of age, or retained after reaching the age of 16." This is permissive rather than compulsory education in our sense of the term.—TRANSLATOR.

mental abnormalities was made known, at least to some degree, through investigations in child study, public and private classes were established for backward children in connection with the regular public schools. There were in the United States last year, according to private information, 27 State and 28 private schools of this nature. According to the official advance sheets [of the Report of the Commissioner of Education] from Washington, there were, in 1903, 20 State schools with 277 teachers and 12,079 pupils enrolled, and 12 private institutions, with 62 teachers and 495 pupils. The great majority of the pupils are put into schools of three classes, each of which is limited to 15 pupils. The teachers are, for the most part, women; for among the 277 teachers in the State schools there are only 61 men. The superintendents of these schools are in the main physicians and make annual reports to the Commissioner of Education at Washington. In these reports, which are published in advance sheets, the reader may find many valuable observations and much practical information.

Finally, it should be mentioned that news has reached us from Australia of an auxiliary school movement there. According to private information, special classes have existed in Sydney and Melbourne for several years.

The foregoing review of the widening movement for auxiliary schools makes it clear that the idea has taken firm hold, not as the "work of individual Hotspurs," but much more as a world-wide call to duty of all those circles to which the culture of mankind makes special and genuine appeal. Many a different conception with respect to the tasks and their performance exists. Still, there is much unanimity in those countries we have mentioned. The greater cities, often the capitals of smaller or greater States, with their industrial population, form the point of attack and the place for the development of auxiliary schools. Now and then a private sanitarium which has the care of the abnormal children of well-to-do parents becomes the pattern for school arrangements for the poorest classes. The tendency everywhere is to organize the single classes into schools, either in connection with the public schools or in complete independence. Often these newest forms of schools are included in the highest school administration of the land in order to guarantee a uniform development. The desire for uniformity prevails over all, but not to such an extent as to crush individual differences, provided they are traditionally or scientifically grounded.

This freedom extends itself to the purposes, to the methods of organization, to the collaborators, and not least of all, to the measures employed. Indeed, the views concerning the children who are to attend are willingly granted the widest scope. Hence, the weak-minded pupils are not always clearly distinguished from the meagerly

endowed. The consequence of this vague distinction is usually the prevalence of idiotic children in the auxiliary schools and the repression of a rational didactic method in favor of a medico-pedagogical method. In Germany, the native land of institutions for meagerly endowed pupils, we hold firmly, and as I believe, rightly so, to the didactic principle, and preserve the character of a school, and yet with all due regard to the results of medical investigations. Experience teaches that the school administrations of different countries follow the example set by Germany and acknowledge her laudable guidance in the auxiliary school movement.

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## II.—REASONS FOR THE ESTABLISHMENT OF AUXILIARY SCHOOLS.

Before the movement began which has just been mentioned it was the task of the folk school to take charge of and advance all pupils, even those who from the first were incapable of advancement. It was taken as a matter of course, unworthy of special thought, that that institution of learning which gave to the children the minimum amount of that knowledge which a child of the lowest classes must have, should also take care of such pupils as could not keep pace at all with their fellows. Perhaps this matter-of-course attitude was, on the one hand, the expression of a certain helplessness in the face of many inexplicable psychical phenomena of childhood, but, on the other hand, it was the manifestation of an opinion which even yet is not entirely suppressed, that the folk school must not form too comprehensive ideas of the minimum of elementary education; it must not advance too quickly in the mastering of the subjects of instruction and disregard the average endowment of the pupils; so it will do no harm if it is checked in its upward striving by some proper ballast. Finally, the schoolman has also contributed his share that no segregation in the folk school should be made. Impressed by the omnipotence of the catechetical art of instruction and by the marvelous power of discipline in the school, he would gladly believe that he could always successfully influence in their intellectual development all the pupils intrusted to him.

For these ideas suggested—ideas which nowadays may seem exaggerated—we can find, however, a real background when we think of the school conditions of the not very distant past. We need only to carry our thoughts back to the public school conditions under which we lived in the seventies, and even in the eighties, of the last century.

The teacher of the primary class in the folk school has seventy or more pupils assigned to him. Their parents do not consider it neces-

sary to give him any helpful information regarding certain peculiarities of their little ones. For the most part they are happy to know the little tormentors are in more or less capable hands. Now begins the teacher's hard work. As far as he can, he tries to be of equal service to all the children of his class, both as regards development and instruction. As the teacher of a lower class is generally a beginner in his art, a long time passes before his eyes are opened to the conduct of some of his pupils. In the normal school, to be sure, he was told not to treat all children alike; yet as a normal school student he carried away the cheerful impression into his practical work that instruction possessing logical sequence and clearness of thought and consistent and inexorable discipline can be simply all-powerful in the expansion and unfolding of little—yes, even the smallest—minds.

Soon, however, difficulties arose in his honest effort to satisfy the demands of the prescribed course of study. Not only were there children in the class who failed entirely to comprehend or repeat the work, but gradually he found children from whom he could not draw a single word. Other pupils, again, could not submit to his discipline, and by their restlessness brought the whole class into disorder. As a true follower of Pestalozzi, the teacher gave himself up to these pupils, who were so much below the desired average of the class, and tried to induce them to cooperate in the class work; but even when his demands on them were but small, his indulgence and patience were not rewarded in the least. Then he lost his patience occasionally and became a stern judge of every misbehavior and failure to do the work.

These judging scenes in the class, which came oftener and oftener, and were a continual source of excitement and annoyance for the teacher, afforded also a series of deep sorrows for the pupils in question. They do not understand why the teacher is so strict with them. They only feel that their comrades are not only indifferent to their troubles, but even like to make fun of them. As a result their sensitive natures harden and their weakened minds are more and more stunted. Indifferently they sit there during lessons, filled with the eager desire to stay far away from school. If up to this time the teacher lost patience only now and again, as he tried to benefit these pupils who hindered his progress so greatly, now his whole interest in them disappears once for all. Next he takes care that the pupils who sit near them are removed from the sphere of their unwholesome influence. Then he leaves them to themselves, and thus makes them entirely passive listeners.

But now comes the time for promotions. How happy the teacher is to take his capable pupils on to the higher class and leave behind those who only annoyed him. With the recommendation "irrecoverable dregs" and "troublesome ballast," they are handed over

to his successor, and a new year of troubles begins for pupils and teacher. Indeed, shall the pupils who possibly even in the second year do not reach the class standard continually remain in this one class? The view that the perpetual sameness of the subjects must at last deaden even the little intellect left leads to the final decision that at least the oldest members of the "dregs," on account of their age, should be allowed to go on to a higher class. It is thought that the stimulus of new subjects may arouse new life in those minds which gradually have become indifferent. Unfortunately the result does not come up to the expectation. The scholars marked out in their class by the difference of age must put up with much rudeness from their fellows, and possibly often hear from the teacher himself that nothing in the world can be done with them. So it is no wonder if all self-respect finally dies out; they have no more confidence in themselves, and are still more in the way in the school.

With each succeeding year the teacher wishes more earnestly to get rid of those pupils who so entirely mar the favorable impression which his class might make, but ever and again must he suppress his desire; for only two possible ways are open to the folk school to rid itself of burdensome and absolutely incapable pupils. In one case it is the reformatory school, which opens its doors, however, only to incorrigible vagabonds; in the other, an institution for idiots can take in a child which is a common danger on account of its entire helplessness or its imbecility. Whoever has tried to bring either proposal before the authorities knows how hard it is to place a child in either one of these institutions.

Taking for granted, then, that among the unpromoted pupils, who in the course of time are pushed into the middle classes, only a very small number are fit subjects for the above-mentioned institutions, what is to become of the others, who are more numerous and whom the folk school dare not and can not shut out? Since it has no right to expel a child on account of lack of natural endowment, the arrival of confirmation time must be awaited, when his dismissal from school will be authorized.

Now, just imagine eight such lost years—years of unsatisfactory work and annoyance for the teacher; years of handicapping and misleading for the pupil of average ability, and, finally, years of stunting of body and soul for the mentally deficient. Should not a change have taken place early in order to prevent all the annoyance, all the disappointments, and all the bodily as well as spiritual harm, for the latter especially will stand in the way of the neglected pupil as he goes out into life?

And is it an honor for the honest work of the folk school when pupils who have been confirmed in church are dismissed from its lower and middle classes? You will answer, "If nowadays such

things should happen in the folk school the inspectors of the city school administration have probably not been able to effect what proper earlier help would surely have brought about. They should have proceeded as follows: The manufacturing places, which are here specially in question, should build public schoolhouses for a small number of classes in districts of equal size, in order to prevent free wandering from school to school among the pupils; the number of pupils in the classes should be lowered from 70 to 50 at the highest; the school principals are to be told to dispense with all unnecessary material in the curriculum; the educative influence of the personality of a good teacher is not to be broken up or lost by a yearly change, or even by departmental teaching in the different classes."

Any public school teacher or principal who has watched the rapid growth of an industrial town will have to recognize the great demands on the unselfishness of the city authorities and the best insight of the city school directors into that which is for the good of the school. What inspectors, school administrators, and argument could do at the time has been done in the city communities. And yet the goal is not reached, namely, that each year all the pupils should be advanced equally, relatively speaking, in their education.

In a German educational paper of October 9, 1904 (Die Allgemeine Deutsche Lehrerzeitung), Mr. Wagner quotes a notice from the Christian World, of Vienna, which may serve here as proof of this: "Just visit once the folk schools in the so-called workingmen's districts, in Favoriten and Ottakring, and see how many children of the first or second class of the folk school have almost completed the time of their compulsory attendance. Regarding how many children is it written in the register: 'Promoted to next class only on account of his age and size!' How many children leave school without having mastered even the elements of reading and writing!"

Mr. Wagner gives another similar statement from a daily newspaper, which pictures the conditions in London. It is as follows:

Judge (to a 15-year-old boy who is physically extraordinarily well developed): "Why don't you work?" Boy: "I can't." Mother: "He will be 15 this year and can leave school." Judge to boy: "In which class were you?" Boy: "In the first" (which corresponds to our lowest). Judge: "But that is the infant class. Say, my boy, how many weeks are there in a year?" Boy: "I don't know." Judge: "Did no one ever tell you?" Boy: "No." Judge: "How many days are there in a week?" Boy: "I don't know." Mother: "In certain lines he is not very talented, but in others he is just that much cleverer. Yesterday morning he took a shilling out of his brother's pocket and spent two hours eating and drinking in the public house. He won't work; he only wants to eat and drink."

Even if nowadays in Germany children are no longer sent out into life from the lowest class, there are unfortunately still enough who

leave with the very imperfect education of the third school grade, having remained as the dregs of the school for eight years.

An analysis of the "dregs" which never advance properly in the school would give us perhaps the following groups of pupils:

1. Children who have difficulties of speech, are weak sighted, hard of hearing, or epileptic. Some years there will be strikingly few of these, others again, more. How they can hinder the teacher's work ought to be well enough known. And yet even these pupils have a right to harmonious development in the school. For them, therefore, a modern hygienic or curative pedagogy would make special provision in the form of courses for correcting their speech, or form special classes for those hard of hearing, the weak sighted, and the epileptic. This kind of separate treatment can really show great results, but, unfortunately, in many a community the establishment of such special classes is a wish which for many reasons can not be realized.

2. Probably the pupils who have constantly lagged behind in the lower classes of the folk school have healthy organs of sense and speech, but they are not in a position to properly work over the stimuli of the outer world into higher psychical products. Besides this, many a time this working over process goes on so slowly that a continuous forcing to strained attention, an endless drill in the folk school class, really harm such a child. But would it therefore be justifiable to take away from him all the influence of proper school training?

Decades passed in the folk school before the view became general, first, that there can really be children who, as a result of their abnormal psychical powers, prove the powerlessness of all didactic art, and then that their condition should be the cause of the establishment of a school specially adapted to their needs. Next, critical observers among practical schoolmen awakened wider interest in the various types established by such observations. Then the research work of the exact psychologist and the psychiatrist began, always helped on by the individual observer, and gradually developed a more general insight into the abnormal development of the child, a development which demands special treatment at home and in school.

The presentation of the preceding course of development in the matter of auxiliary schools has been able to show considerable unanimity in this insight. As far as I know, only one expression of the other side of the question has been made public. J. H. Witte ascribes the establishment of auxiliary schools to the influence of an almost obtrusive activity on the part of certain hot-heads and their clever scheming. That is a startling statement. However, Witte really does not wish to startle. He gives reasons for his assertion. He

thinks that the auxiliary schools withdraw the mentally deficient pupils from the helpful influence of the more gifted, and that the effort to benefit a class made up only of the deficients can never be successful. Rather let the disobedient pupils be put in among the obedient, one-third weak-minded pupils among two-thirds strong.

This old school recipe is certainly often applied by individualizing teachers when they are dealing with pupils who are often inattentive, frivolous at times, and now and then indolent. If, however, even with the very best intentions, the pupil can not be attentive at all, if he is continually forced by bodily deficiencies to remain mentally indolent, if, further, his moral balance remains unsteady on account of many illnesses, is it not better to bring about a separation as soon as possible? The so-called better environment in the class can never spur him on to anything better. To see oneself surpassed by those about one enlivens the mind, and this, during and after the gloomy school days, may hasten on all kinds of moral defects, often to the detriment of human society.

How different, on the other hand, is the mental attitude of a child trained in an auxiliary class! He is enlivened, stimulated, his whole emotional attitude is changed. Now he soon notices that he makes a certain progress with other fellow-pupils, that the teacher is concerned with him as with all the others; now he is also withdrawn from the scorn of his classmates, because the teacher's harsh words and corporal punishment have been changed into kindly treatment. Besides, the instruction is now suited to his mental horizon, to his field of view, so that rays of increasing enlightenment sometimes fall into the gloomy twilight of his mind. Of course this mental progress will not be seen at once. Time is needed for him to accustom himself to new conditions, for a weakened or abnormal mind needs a longer time and often, too, more powerful supports than a normal one. But time will, finally, with the aid of the inspiriting consciousness of being able to do something, make firm the unstable moral balance, so that it is a real philanthropic duty to separate the mentally weak pupils from the mentally strong. And when Witte calls "the coupling together of the weak with the weak" a measure of superior strength imposed upon burdensome weakness, he is overlooking the fact that a child gets along best in that circle whose members are nearest to his own mental condition. Thus, pedagogy makes no confession of failure in speaking of separating the dull pupils from the more gifted and placing them in a special class or school.

Witte advances further an objection of a hygienic nature against the establishment of an auxiliary school. "The weak-minded, being sickly and physically incapable of resisting disease, naturally become sources of epidemics." But this contention is also unsound. To begin with, at the suggestion of the State authorities, every auxiliary school

in Prussia is under constant medical supervision; in the next place, the teachers are gradually so taught by practical experience that they are finally able, working hand in hand with the physicians, to avoid the spread of diseases; moreover, whoever has observed health conditions among auxiliary school pupils for a number of years, can prove that they are attacked by children's diseases much less than folk school pupils. The reason for this lies in the fact that these pupils have already had nearly all the infectious diseases before coming to the auxiliary school, and are now suffering from the results of these. So these special classes can not very well be the points of departure and the sources of epidemic diseases.

Finally, Witte is not afraid to accuse the champions of the auxiliary schools of materialistic tendencies. According to him, "they fall for the most part victims to the superficial advocates of scientific medical theories which are still unproved, and of the so-called experimental psychology, according to which it is alleged that the mental life is entirely dependent upon the physical, the spiritual existence upon the bodily—a view which is as sad as it is false."

This is not the place to discuss the well-known "ignoramus," the sad avowal that the investigator may be able to recognize individual expressions and workings of the spiritual life, and occasionally to prove as well their dependence upon physical conditions, but that it will always be impossible for him to arrive at a clear idea of the unity of the mental and the physical. The practical schoolman knows very well this limitation, and of course does not fall into a materialistic channel when he asserts: "This child shows certain mental peculiarities as a result of disease, which he either inherited or contracted after birth, and does not make progress in the folk school. But he is not responsible for his weak condition. He can not make any intellectual progress in the ordinary school because his organism is more or less abnormal." Let it be granted that the brain processes give no direct clew as to how the spiritual life, as such, comes to exist, and let a divine endowment be assumed to these processes; psychiatry and experimental psychology can unfortunately reveal plainly enough at times that this divine gift in man is so small, and in addition is so held within bodily limits, that a disregard or even a contempt for the physical may be fatal to this endowment. This view no practical schoolman can repudiate. Yet he by no means needs to confess himself a disciple of the so-called "medical pedagogy," which takes most delight in proving an inner economic activity of the brain and regards the whole convex cerebral surface as a deposit of moving memory pictures.

It must indeed be recognized, says L. Strümpell, that medical therapeutics has placed in a clear light the dependence of a normal development of the bodily life upon a rightly directed psychic life,

and has pointed to the manifold injuries to the body resulting from a false pedagogical practice. But therapeutics has its limits. Above all, it can not be the guardian of the whole realm of pedagogy; it must hold itself aloof from speculations which lack the basis of experience. And experience regarding the development of the bodily and spiritual life of the child, for example, is comparatively recent, and demands so much deepening and broadening that purely materialistic speculations are attended with risk.

But upon such data, which we may rightly call superficial, we do not base the necessity for the auxiliary school. Rather it will help to understand the child with his psychical deficiencies and good qualities on a basis of observation already authenticated. For this purpose the teacher uses the demonstrable results of child psychology, and works especially in the field of so called psychopathic deficiency in childhood. This idea, used first by Koch and later by Truper, marks the great intervening realm between the sickly and the healthy mind, which is as rich in its phenomena as it is difficult to recognize. We shall not characterize them here. It is enough to have noted their existence, which, with all due consideration of the physical basis, can not make apparent the dependence of the spiritual being upon the physical. As a result, the odium of materialism can never be attached to the champions of the auxiliary school, and the basis for the necessity of its establishment can not be called uncertain or superficial.

The occasion for the establishment of auxiliary schools is therefore given, in spite of Witte, by the real—not imaginary—existence of pupils who can not be advanced in the folk school. These children are perhaps not simply dull, but those who, for various reasons, do not think, feel, and will normally, and so are incapable of following the regular school work. For them, therefore, the common school—the ordinary school—is not the place which can awaken or improve their weak or abnormal psychical qualities. On the contrary, the regular school, with its order and activity, will be a place of torture for them, which suppresses still more the little good that remains in their weakened minds, and this to the detriment of society, members of which they will be later on. For all larger districts, in which a number of such children are found, it is therefore an absolute necessity to have a class for their special aid.

But is the folk school the only one having pupils who, for various reasons, can not in any way be advanced? The teachers in the middle schools, the preparatory schools, as well as in the higher schools for boys and girls, will certainly be able to think of individual pupils who might far better have stayed away from these schools. In his school investigations, Lenbuscher found two mentally abnormal among 165 pupils at the Meininger Realgymnasium. Certainly this

one secondary school is not distinguished from all others in this regard. Laquer says even that the defectives among the well-to-do classes are, comparatively speaking, not less numerous than those from the working classes. At first glance this seems exaggerated. But whoever knows Benda's estimates and has read Altenburg's splendid exposition of the art of psychological observation, will have to agree with Laquer.

Now, the secondary school has an advantage over the folk school, and in this case it is an enviable one, namely, the privilege of dismissing unfit pupils. Strangely enough, it seldom uses this privilege. This is the case because the school directors seldom succeed in making well-educated people of high standing in society understand that their deficient children suffer much from the work which the school must demand and from the external organization of school life. They torture the child with private lessons, or give him over to pedagogical bunglers, before they realize that the work of the higher school can not be accomplished and mastered by the untalented, poorly endowed children of rich parents. For such children special schools or special institutions, as, for example, Trüper's "Erziehungsheim," are more appropriate than the regular school.

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### III.—ADMISSION PROCEDURE.

We have previously shown that, to the detriment of the school, children are frequently kept behind, some in the first year, others in the second or third year, who might better be placed in an auxiliary class or school. We have now these questions to answer: When is the proper time to remove these children from the school, and how can we be at all sure that no pupil is unjustly placed in the auxiliary school?

In the development of our pupils, which is often spasmodic and sometimes very one-sided, it may happen that the teacher of the regular school, allowing himself to be guided by the mood of the moment, may without reflection deny that this or that pupil has any talent whatever, and declare him a fit candidate for the auxiliary school. Or it can easily happen that by his unfortunate home conditions, his being overburdened with manual labor outside of school hours, and by irregular attendance at school, which is perhaps a result of frequent change of residence on the part of his parents, a child may be mentally injured to such an extent that the teacher becomes impatient and is soon ready to propose that he be placed in a special class. Finally, it is possible in individual cases that, owing to repeated instances of punishment, the pupil develops a certain defiance which for the time being prevents all mental progress, and the

teacher develops an aversion which keeps alive in him the desire to bring about the removal of such elements from the school. Are the authorities, then, to consider the proposals in all the cases mentioned? But the fate of the pupils must not be dependent on the moods or prejudices of the class teacher. Therefore the school principal should advise every teacher who makes these proposals to spend more time in wider observation. Sometimes, especially with children in intermediate grades, it is helpful to transfer them to another teacher. A change of classes often has the same effect as a change of air on a sick person. Everything must be tried in order to prevent the dismissal from the public school, as incapable of learning, of any child who can to any extent be benefited there. To do this the teacher of the regular school must be more psychologically trained than formerly, that he may be more an educator than an instructor.<sup>a</sup> And in truth he must have developed not only a profound understanding of normal children and a deep interest in their treatment, but he must also show at least a general acquaintance with the development of the child soul, which so easily becomes abnormal. Naturally, in thinking of the physical and mental good of the individual pupil, the teacher must not lose sight of the whole class; but, at least in the case of the most conspicuous pupils in his class, he has to give valid reasons for his proposal of separation which are based upon considerable observation. In other words, the folk-school teacher, as well as every other teacher, must be able to detect readily the signs of mental deficiency in children.

At present there is much discussion, to be sure, regarding the proper representation of the conception "weak-mindedness" (*Schwachsinn*), and regarding the classification of its various phenomena; every investigator in this field tries to find other words when he wishes to express the idea of weak-mindedness. In the practical conduct of the public school, however, we are not concerned with scientific definitions and distinctions, but with the gradual understanding of the deviations of a child nature from its normal path of development. And the school, with its systematic activity, offers abundant and undoubtedly the best opportunity for the determination of the spiritual condition of the child.

Many a child afflicted from birth may develop at home pretty much as other children, except perhaps more slowly, but at school it shows very strikingly that it is not able to meet the high demands which, for example, the first two school years make upon every child. Either it appears to be indifferent during the lessons (apathetic), or apparently keenly interested, but without any deep mental participa-

<sup>a</sup>This recommendation has recently again been made by G. Wanke, in his *Psychiatrie und Pädagogik* (Wiesbaden, Bergmann, 1905).

tion in them (erethistic). In the one case the child gets tired very easily, and his eyes grow dull, because he can not grasp all the concrete details of the material of instruction, and because the reflection necessary for the comprehension of the subject presented is wearisome. By an examination the teacher can very clearly see the narrow range of his knowledge, and also that his ideas are disconnected and lack all systematic arrangement. As a result, his memory seems to be a mere sieve, his judgments are never decided, and his conceptions are never fully formed. In the other case, the pupil is apparently very much interested in the subject presented by the teacher, is probably very attentive, but his attention is soon distracted. Any object at all which appeals to his senses can not be overlooked by him, but must be observed carefully. Continuous attention is for him an utter impossibility. Even his tendency to motor activity prevents him from carrying out any possible resolution he may have made to be attentive. Such a pupil simply can not sit still; in spite of all the teacher's commands he has to move his head, hands, and feet and would like best of all to run about the class room.

Another case may come to the notice of the observant teacher. Sometimes a child appears apathetic only because a defect of speech has made him silent. Perhaps during the first weeks at school he tried to take part in the lessons, but he was made conscious of his deficiency by the teacher's criticisms and still more by his school mates' teasing, and now he can not be persuaded to reveal by speech what all his brooding means. When the defects of the child's organs of speech are easily seen, his unwillingness to speak in the presence of others is readily explained. But a divided palate, an abnormally developed uvula, or an abnormal tongue are not so easily discovered as being the causes of faulty speech. And when we think how numerous are the difficulties of speech which come under the general heads of stammering or stuttering, or when finally we consider how often speech, and at the same time thought, are checked by pathological conditions in the air passages, we open up fields which show the teacher how hard it is to discover all the phases of the abnormal child mind.

A further difficulty arises, however, when the talkative child confronts the one who to all appearances is dumb. Talkativeness, like restlessness of body, may be construed as a deviation from the normal child development. Sometimes during the lesson the child who is afflicted with too great talkativeness answers correctly. The teacher is then inclined to declare that this pupil, who is apparently so well developed as far as speech is concerned, is mentally capable. But gradually the senselessness of his talk is revealed; for the most dif-

ferent problems he has often only the one solution, and for one question, the wording of which is but slightly varied, he has at least one hundred answers ready. These last are quite without meaning and resemble the so-called reflex actions, which must be performed without the cooperation of higher mental activity.

As a solution of the difficulties which are constantly arising, it has been thought that certain typical signs can be pointed to whereby fit candidates for an auxiliary school, or weak-minded persons in general, can be detected. So in various writings we find references to external marks of abnormal child nature which are easy to recognize. According to their representations, nature has given the observer distinct signs by which to fathom the inner man. This view is confirmed, too, by experience. Now and then among deficient children we come across some who have very large, almost square heads, or very small, pointed ones. Now we see skulls which are unsymmetrical, again we meet the so-called Mongolian type, and the frog or the bird face. Since, however, other experiences may teach the opposite, we have recently given up the theory of the so-called signs of degeneration. They are not to be taken as sure signs of mental deficiency; at most they can only serve in the way of confirmation.

It is very clear that in the teacher's observations lack of intelligence will play a great part. But it is not the only standard by which to judge abnormal psychical development in a child. Generally, in addition to mental deficiencies there is a social and ethical defect, and perhaps also a defect on the side of the emotions. The abnormal child is not only mentally restricted, he is perverse in morals, hostile to society, and either rough and coarse or all too gentle. He violates the laws of good manners in every possible way, likes to do those things which most children hate, and sometimes gives himself up to those sexual errors which finally influence his health. Not until urged will he take part in play with children of his own age; he would rather brood in corners than play of his own free will. And if he does stay with his playmates he often gets into a passion; either he is irritable or a nuisance on account of over-sensitiveness. In these abnormal pupils the teacher may also discover a tendency to damage things, and if circumstances are favorable this may turn to the tormenting of animals and of human beings. They like to seize and destroy what others cherish, and show malicious joy at the pain of animals or the sufferings of their fellows. Further, the abnormal pupil sometimes causes his parents and the whole school much anxiety by wandering off; often without cause, often from fear of punishment, he leaves the neighborhood, roams about in districts unfamiliar to him, and passes the night in the most unheard-of places. After some time he returns in a most deplorable condition and is usually

unable to give any reason for his wanderings. If all these deeds and improprieties of which this child is guilty are followed by warnings and punishments, the teacher soon sees the uselessness of trying to influence him. Neither words nor blows have any educative result; even enticements and rewards fail.

But in thus characterizing the ethical and emotional defects, we must not neglect to consider the extent of their connection with the mental defects—for how many children, especially boys at the "awkward age" and even girls in the years of development, deviate from the normal in the development of their emotions and their will, and yet are not subjects for an auxiliary school. For this deviation, however, they are not always to blame; faulty training, unfortunate home conditions, and unsuitable surroundings in general, often bring about the child's demoralization rather than any pathological condition. Moral defects in themselves, therefore, must not be taken to indicate pathological conditions. Neglected children, as such, do not then belong in the auxiliary school, or it would soon take the form of an institution for the care and reformation of children, with continually changing classes, while it should be, on the contrary, a school tending to become, so to speak, a pedagogical sanitarium.

In the foregoing we have merely suggested the teacher's difficulty in furnishing convincing evidence regarding the deficiencies and peculiarities in the whole being of a pupil whom he contemplates transferring from the folk school to an auxiliary school. Many phenomena and manifestations seem to the teacher to be infallible proofs of abnormality, while other observations cause him to hesitate. And so, many a pupil becomes a psychological puzzle to him; but should he continue to be so? The teacher must seek the solution of this puzzle, and that by finding out the particulars of the development of the pupil in question before he entered the school. Perhaps the home may furnish the teacher a sufficient explanation of the child's strange conduct.

To gain this end he may take one of two ways. Either the mother is asked to come to the school and give an explanation, or the teacher seeks out the pupil in the parent's home. The first way is of course the easier, but also the less satisfactory; for it isn't everyone's disposition to enter the house of the poorest of the poor. Even if the visitor does not become a real martyr to this worthy cause, it requires at any rate great self-command to call, possibly at houses of ill-repute, and converse with people who are often coarse and vulgar. For these reasons it is very doubtful whether a woman teacher can or will decide to take this means. And yet the teacher must find out definitely all about the pupil if he wishes to have valid grounds for his proposal to place the child in an auxiliary school. But if you depend upon the information given by the mother in the school, you

have by no means any guaranty of its truth. For at first we scarcely realize how poverty, which often rules most cruelly in the families of the candidates for the auxiliary school, causes them to deceive and lie, and also how a certain pride and shame easily lead to false statements. If therefore visits to the home are impossible, and the mother's reports do not seem trustworthy, other sources must be sought. The sisters of charity, the overseers of the poor, and the information bureaus of the city poor and of the police administration must be called on for aid. The testimony of several trustworthy and experienced persons can to some extent help to complete the teacher's own judgments.

But compliance with this demand must always be upheld, namely: the teacher must judge for himself, and confirm by visits to the home, under what conditions the proposed auxiliary school pupil lives, what diseases he has had to combat, and what bodily injuries have influenced his abnormal development. In many cases the teacher's visits to the parent's home will confirm what he already suspected; in other cases he will discover entirely new signs, in the fateful stamp which has influenced the course of the pupil's childhood before his school days.

Realizing that it is exceptionally hard for a folk school teacher to follow all the paths leading to adequate research regarding child-nature, and definitely to answer the question, "What must we do in order to avoid unjustly transferring a pupil to the auxiliary school?" question sheets, observation blanks, forms of proposal, and admission blanks, have been prepared. They are to guide the teacher in his comprehensive study of the candidates for the auxiliary school. These question sheets are very variously arranged; almost every school uses a different one. The explanation of this diversity may lie not only in the individual opinions of the author, but also in the guiding principle. The question is, "Shall the doctor or the teacher plan such a sheet?" The physician, as is easily seen, will naturally consider some questions pertinent which the school man will not. As proof of this, some typical sheets are here given.

A. *Plan of the question sheet used at Frankfort on the Main.*

Easter, 19 .

Residence .....	.....			
Date of birth .....	.....			
Pupil, No. .....	of class.....	In.....	.....	school year.
Parents.....	Vocation.....	.....	.....	.....
Home relations (name of guardian, if any) .....				
Number of the mother's miscarriages.....		Number of children.....		
Birth: Legitimate or illegitimate.....				
Inherited taint (diseases of the parents)				
Mental disorders—lung troubles—dipsomania—crime—suicide—syphilis.....				

Brothers and sisters: Whether weak-minded, silly, epileptic, etc.

Previous illnesses: Especially convulsions, paralysis, St. Vitus's dance, rickets, bladder trouble, fainting spells, etc.

Defective senses: Cross-eyed blind deaf lame — difficulties of speech, etc.

Spiritual qualities: False — thievish shy restless — irritable — unsociable dull — tearful, etc.

Opinions of teachers regarding industry, progress, formation of ideas (ideas of number), reading, writing, etc.

Was the child in any previous year recommended to the auxiliary school?

Other remarks \_\_\_\_\_

Rector \_\_\_\_\_ School physician \_\_\_\_\_

B. List of candidates proposed for the auxiliary school at Frankfort on the Main, also the personal sheet of the auxiliary school.

Name in full \_\_\_\_\_

Date and place of birth \_\_\_\_\_

Religion \_\_\_\_\_

Son \_\_\_\_\_

Daughter } of: (name of father or guardian) \_\_\_\_\_

Residence \_\_\_\_\_ street \_\_\_\_\_ story \_\_\_\_\_

Is house in front or rear of lot? \_\_\_\_\_

Pupil of \_\_\_\_\_ school, member of \_\_\_\_\_ class, since \_\_\_\_\_

Previously \_\_\_\_\_ year in \_\_\_\_\_

Recommended to the auxiliary school (date) \_\_\_\_\_

Recommendation repeated? \_\_\_\_\_

Date of entrance to auxiliary school \_\_\_\_\_ in class \_\_\_\_\_

Date of dismissal from the auxiliary school \_\_\_\_\_

Cause \_\_\_\_\_

Chosen occupation \_\_\_\_\_

INFORMATION REGARDING PARENTS, CONDITION OF THE CHILD WHILE ATTENDING THE REGULAR SCHOOL, AT THE TIME OF HIS ENTRANCE TO THE AUXILIARY SCHOOL, AND WHILE IN ATTENDANCE AT THIS SCHOOL FROM THE FIRST TO SIXTH YEAR.

1. Information regarding parents.

Birth, legitimate or illegitimate \_\_\_\_\_

Is father still living? \_\_\_\_\_ Age at death \_\_\_\_\_

Is mother still living? \_\_\_\_\_ Age at death \_\_\_\_\_

Cause of death \_\_\_\_\_

2. Regarding brothers and sisters:

Are they feebly endowed? Pupils of the auxiliary school? Epileptic?

Idiotic? Blind? Deaf? \_\_\_\_\_

Number of brothers and sisters living \_\_\_\_\_ Ages \_\_\_\_\_

Number of brothers and sisters dead \_\_\_\_\_ Ages at death \_\_\_\_\_

Cause of death \_\_\_\_\_

Number of miscarriages of the mother \_\_\_\_\_

3. Home conditions: Poverty, poor dwelling, broken family life, incompetency of father or mother to gain a livelihood.

4. Inherited tendencies: Lung troubles, dipsomania, mental disorders, crime, intermarriage of relatives, suicide.

5. Diseases which the candidate has had: Measles, scarlet fever, diphtheria, whooping cough, meningitis, rheumatism, paralysis, convulsions, St. Vitus's dance, fainting spells, bladder troubles, rickets, severe head wounds, accidents.....
6. Development: Learned to talk at \_\_\_\_\_ years of age; learned to walk at \_\_\_\_\_ years of age.
7. Diseases from which he still suffers: Headache, cough, indigestion, swelling of the glands, cutaneous eruptions, bed wetting, convulsions .....
8. Hearing: Hard of hearing, festering of the ears.....
9. Sight: Short-sighted, weak-sighted, cross-eyed, inflammation of the eyes, color blindness, quivering of the eyes.....
10. Speech organs and speech: Stuttering, stammering, lisping, malformation of the jawbone, irregular teeth, tonsils, thick tongue .....
11. Respiration: Sleeps with mouth open, difficulty in breathing through nostrils, shortness of breath.....
12. Physical deformities: Lame ness, curvature, rupture, shape of head, left handed, chicken breasted .....
13. Physical conditions (see certificate of health).
14. Character and disposition: Serious, peevish, listless, sensitive, tearful, shy, timid, cheerful, passionate, companionable, cruel (tortures animals), disturbs the classes, restless, untidy, mendacious, thievish, excitable, slow, superficial, quarrelsome.....
15. Mental condition:
  - Memory: (a) In general .....
  - (b) In particular directions (number, form, words, color, locality).....

Power of thinking, attention, power of apprehension, observation, mechanical adaptation (poetry, melody, multiplication table), impression made by mental effort, retention of ideas, formation of concepts (vague), power of judgment (speed, accuracy), imagination (excitable).....
16. Notes and counsel of the physician (see accompanying certificate):
  - To be received in the auxiliary school.....
  - To be excused from certain subjects .....
17. Do the parents wish the child to enter the auxiliary school?.... Yes or No.
18. Result of the examination regarding his entrance into the auxiliary school.....

DEVELOPMENT OF THE CHILD IN KNOWLEDGE AND SKILL IN THE REGULAR SCHOOL IN SUMMER AND WINTER, IN THE AUXILIARY SCHOOL FROM THE FIRST TO SIXTH YEAR.

1. Religion: Ideas, interest, knowledge and retention of passages from the Bible, stories, songs.....
2. Object lessons: Knowledge of things, interest in his observations, fables.....
3. German:
  - (a) Reading: Printed and written alphabet, connecting of sounds, syllables, and words, sentence reading, reading of connected pieces, German and Roman type, mechanical skill, intelligent reading, reproduction, typical mistakes in reading, tone of voice in speaking, slurring of sounds and syllables.....
  - (b) Spelling: Tracing of letters or words, copying, analysis of words, dictation, typical errors.....
4. Arithmetic: Series of numbers, how large numbers he can use, the primary operations, mechanical skill, oral and written arithmetic, memory for numbers, ability to apply rules to problems.....

5. Writing: Small letters or capitals, regularity of their formation.....
6. Singing: Hearing, sense of rhythm, memory for music, fondness for music.....
7. Gymnastics: Strength, power of endurance, sociability in playing .....
8. History: Interest in persons and events and memory for them.....
9. Geography: Sense of locality, fundamental principles, map reading .....
10. Natural history: Behavior when looking at objects, relation between structure and function .....
11. Drawing: Net-line and free-hand drawing, exercises in measuring with the eye, neatness .....
12. Hand work: Kind, ability, interest .....
13. Conduct (legitimate reproofs or punishments) .....
14. Industry and attention: Home work, additional occupations .....
15. Absences. (a) Excused .....
- (b) Unexcused .....
- (c) On account of illness .....

C.—*Question sheet of the Brussels auxiliary school.*

**Reasons for the examination of the child:**

1. Inadequate or abnormal mental development.
2. Continual and notorious bad conduct. Inattention.
3. Three years behind in school training.
4. Serious difficulties of speech.

**Documents which must accompany this form:**

1. Report of child's school career.
2. Report regarding causes which led to the proposal that he be admitted.

This report must contain as detailed answers as possible to the following questions:

- (a) Are the parents in good health?  
What is the state of their morals?  
Do they drink?
- (b) Has the child been ill?  
Has he shown no imperfection in the activity of his senses (as sight, hearing, feeling, muscle sense)?  
Is he given to self-abuse?  
In what branch of study has the child made greatest progress?  
Is he attentive? idle? rude? bold? saucy?  
Is his ill behavior continual or periodic?  
Does he steal? lie? Is he boisterous?
- (c) To what intellectual or educative treatment has the child been subjected?

D. *Question sheet of the Leipzig school for mental defectives\**

- (A) 1. How many children are there in the school who are evidently weak-minded?  
 2. How many children attend the school the first year and are not to be promoted from the lowest class at Easter?  
 3. How many children attend school the second year even, and can not be promoted at Easter from the lowest class?  
 4. How many still older children are there who are still in the lower classes?  
 5. How many of the children under 2, 3, and 4 are weak-minded?

\* From W. Reitke (op. cit.).

- (B) In judging weak minded children, the following points of view are the principal ones to keep in mind:
1. Can the child distinguish right from left and make movements in accordance with this distinction?  
Does he know the colors?
  2. What is the condition of the development of his power of speech? Can he articulate all sounds, connect the sounds properly in words, speak distinctly and connectedly, repeat a short sentence correctly, or does he leave out whole words in speaking a sentence, is the order of words in the sentence confused? Does he stammer or stutter?
  3. Can he distinguish objects and representations of objects, and what ones? Can he say something about objects which are close at hand, follow a simple conversation, and also give information about things which are not present?
  4. What knowledge has he gained at school? Does he know the alphabet; can he read words, does he know the letters of the different alphabets? Can he write letters and words correctly from memory, or can he only copy these mechanically, or can he not do even this correctly? How far can he count forward? Can he also count backward, and from what number? How many columns of figures can he add, how many subtract? Has he any idea of multiplication and division? To what number can he work out simple arithmetical problems in his head? To what number with the help of his fingers?
  5. In disposition Is he docile or stubborn and obstinate, good or ill natured, quiet or lively, companionable or unsociable?

*E.—Admission form of the auxiliary school at Plauen.*

It is proposed that \_\_\_\_\_, No. \_\_\_\_ of main register, pupil of \_\_\_\_ school,  
be received into the auxillary school.

N. B. Given name to be underlined

Date and place of birth.	When and where did he enter school?	How long has he been in this class?	How many times has he failed to be promoted?"	Name and pos- ition of father, guardian.	Exact statement of his last place of residence.

Religion :

Of the father -----

Of the mother -----

Of the child -----

Vaccination scar -----

N. B. Underline appropriate descriptive words and add anything important

General Impression : Mentally weak, very weak, imbecile. Dull, bright.

Disposition : Cheerful, tearful, changeable.

Character : Obliging, true, honest, kind, confidential, bold, eager, bashful, spiteful, disobedient, untruthful, dishonest, unsociable, timorous, idle, impudent, inclined to vagrancy.

Interest : Is it easy or difficult to excite? Does he show it strongly, weakly, or does it vary?

Does his interest in one object last for too long, too short a time?

What line does he prefer? . . . What does he neglect? . . .

Uninterested, distracted.

Apprehension : Quick, transient, uncertain, slow, vague, definite.

**Memory:** Normal, weak, very weak. Intelligent, unintelligent observation. Quick, slow in recalling ideas. Frequent confusion.

**Speech:** Normal, slow, rapid. Talks much, little, not at all, sensibly, unintelligently. Stammers, stutters.

**Development:** Child began to talk at \_\_\_\_ years of age; to walk at \_\_\_\_ years.

**Movements:** Gait \_\_\_\_; arm and hand movement \_\_\_\_; too hurried, clumsy; awkward, dextrous, left handed

**Skill gained at school (N. B. Underline with black ink the letters he can read in print; in red those which he can write):**

1. Reading:

2. Writing: a o u e i l m n r — h ch j — v f — s ss sch — ß ö ü b d g p t k — x z — qu ng — ni üu au — ei eu — y — O Ö A Ä — Q Q — S Sch R N M — V W P Z U T J — K F L R H E — D — X Y C.

3. Arithmetic:

How far can he count forward?

From what number can he count backward without leaving out a single number? \_\_\_\_\_

How far can he add 1+1, etc.? .....

From what number on can he subtract 1? .....

What ideas of number has he? .....

What other operations of arithmetic has he mastered? .....

**Parents' home:**

Who looks after the child from day to day? \_\_\_\_\_

Has a change in bringing up taken place? \_\_\_\_\_

What was its nature?

What care is given to the child's body? .....

What to his education? \_\_\_\_\_

#### PHYSICAL.

Number of absences \_\_\_\_; excused \_\_\_\_; unexcused \_\_\_\_; in how many years of school? \_\_\_\_\_

Kept out of school on account of \_\_\_\_\_ an especially long time, namely, \_\_\_\_\_ weeks.

The child can not follow the instruction on account of: Frequent headaches, nausea, bowel trouble, general languor (falls asleep in class), sleeplessness, epileptic fits, dizziness, involuntary twitching of the muscles.

Shortsighted, cross-eyed, hard of hearing, chronic inflammation of the eyes, running from the ears (right, left), chronic nasal catarrh, swollen tonsils.

His meager ability can be traced back to: Inheritance, hard birth, a fall, fright, illness. He has formerly suffered from: Brain disease, rachitis, eclampsia, epileptic fits, measles, scarlet fever, diphtheria, inflammation of the lungs, whooping cough, persistent skin eruptions.

The child is the first, last, \_\_\_\_\_th; a twin.

Of \_\_\_\_\_ brothers and sisters still living \_\_\_\_\_ showed themselves weakly endowed at school; \_\_\_\_\_ not yet old enough to leave school; are behind their classes. Of \_\_\_\_\_ who have died \_\_\_\_\_ were untalented; \_\_\_\_\_ mentally diseased. They died at the age of \_\_\_\_\_ from \_\_\_\_\_.

Of parents and other blood relatives \_\_\_\_\_ are not gifted, \_\_\_\_\_ suffer from tuberculosis of \_\_\_\_\_; from syphilis \_\_\_\_\_, from mental derangement \_\_\_\_\_; from alcoholism \_\_\_\_\_.

Summary of the above mental defects \_\_\_\_\_

Plauen (date) \_\_\_\_\_

Director \_\_\_\_\_ Class teacher \_\_\_\_\_

[School stamp]

## F.—Admission blank of the auxiliary school at Halle.

It is proposed that \_\_\_\_\_ No. \_\_\_\_\_ in main register.  
 be received into the city  
 auxiliary school.

Born \_\_\_\_\_ as \_\_\_\_\_ legitimate child of \_\_\_\_\_ {dead.  
 still living.

In the care of \_\_\_\_\_ residence \_\_\_\_\_  
 Baptized \_\_\_\_\_, not baptized. \_\_\_\_\_ Vaccinated \_\_\_\_\_, not vaccinated. \_\_\_\_\_  
 Since \_\_\_\_\_ at school, \_\_\_\_\_ years in the primary class, and \_\_\_\_\_ years in  
 class next to the last.

Up to the present, \_\_\_\_\_ years in the \_\_\_\_\_ class of the {intermediate  
 primary } school  
 under class teacher \_\_\_\_\_

Remarks of the present school principal \_\_\_\_\_  
 Opinion of the principal and the physician of the auxiliary school \_\_\_\_\_  
 Decision of the city school superintendent regarding final admission. \_\_\_\_\_

(N.B.—Questions 1 to 3 following are to be answered after visiting the home. Questions 4 and 5 are to be answered at three different periods in the year. On completing each series of observations, the answers are to be presented for examination to the school principal.)

Points of view from which the observations are to be made:

1. What has been learned regarding the parents? (Conditions of life, what care do they take of the child?) No. of visits to the home \_\_\_\_\_
2. What reports do the parents give regarding the child? (Illnesses, accidents, . . . . No. of visits . . . .)
3. What physical defects are noticeable, especially in the organs of sense and in the movements of the muscles? \_\_\_\_\_

Observations.	To last week before summer holidays.	To December 1	To February 1
4. Has the mental development in general been unsatisfactory? (a) Speech fluent or defective (b) Partial apathy and interest in the lessons Weakness or unsteadiness of attention Weakness of memory (c) Strikingly good or bad characteristics How does school work affect him? . . . .			
5. Condition of his school work In what subjects is he backward? How far has he gone in arithmetic, reading, and writing?			

A comparison of these sheets brings to our notice the following facts: Since in the first place schoolmen have to answer these printed questions, they must be principally of a psychological and pedagogical nature. At the same time the questions must be so stated that they will cause repeated observations to be made, and also so that they may be answered in the briefest possible way. Finally, on looking them over, not only the one who has answered them, but any reader, should be enabled to get at a glance a view of the development of the child before his school years.

The question sheet used at Halle, which has been worked out by the auxiliary school staff and myself, and which has been tested for several years, is put into the hands of the teachers of the lowest

classes in the primary and intermediate schools at the beginning of each school year. Then, too, their observations must begin. If the child does not seem normal to the teacher, data regarding him are to be entered upon the front page. Questions 1 to 3, on the inside page, are to be answered only after visits to the home, and 4 and 5 at three different periods; the entries are to be presented to the school principal for examination at the close of each series of observations. Shortly before Easter the admission applications of all the schools concerned which have been approved by the school principals are submitted to the director of the city school administration, who in special cases seeks the opinion of the physician and the principal of the auxiliary school, and only then delivers the final decision regarding the admission of a child into the auxiliary school. Such a method of procedure, though it may perhaps seem formal, compels careful and repeated observation of a pupil who appears to be abnormal, and generally it prevents his overhasty dismissal from the regular school.

Ordinarily about 50 application forms are presented every year to the head of the city school administration for his decision. Of these, after consultation with the principal of the auxiliary school, generally 20 or 30 are sent back with the decision "to remain in the folk school," or "to be proposed again next year." Forms with such remarks are naturally not welcomed by the folk school teacher. He must continue to put up patiently with the pupil who is such a burden to him, and of whom the school principal, too, perhaps, wanted to rid him.

Granted that 20 to 30 application forms come back to the different school principals from the president of the school administration, with the certificate of transferal to the auxiliary school, the pupils so marked are removed from their respective schools at Easter, and toward the end of March are given over to the principal of the auxiliary school. On the basis of the forms submitted, a preliminary assignment of the children to the classes of the auxiliary school may be made, so that they may find their places after the Easter holidays.

Having thus described the customary admission procedure at Halle, we must now note the usual practice in the folk schools of Mannheim. This practice must be mentioned here, because—as I know from my own observation—the admission of candidates proceeds under even more difficult circumstances than at Halle.

In the year 1899 the city school superintendent of Mannheim, Doctor Sickinger, made an attempt to classify the pupils of the folk school according to their abilities, and to use the great number of parallel classes of each grade in forming instruction groups having each an individual character. As a result, in the school as a whole,

there are different instruction routes, having different plans of studies. In fact, three kinds of classes may be distinguished, as follows:

1. Classes for pupils capable of doing normal work, who at the end of seven school years would be able to reach the highest class, and who form the advanced department having the regular eight grades.

2. For those children who, as a result of inadequate ability, can not be promoted to the next class, of which they would form the "dregs" and "ballast," a special division of the school, aiming to do simpler work, is organized.

This division of the school, with its special classes, which are also called "repeating" or "furthering" classes, naturally does not let its pupils advance as far as the normal pupils; for it a special goal must be set, when its work shall be declared finished. Therefore the last years of these special classes are called "finishing" classes, too. In them (in the lower grades it would still be possible for pupils to return to the regular classes) the teacher who is inclined to make psychological observations finds abundant opportunity to individualize. For the classes are but small (30), and "successive" instruction in the section allows the teacher really to know his pupil and to reawaken in him his desire for work, which may almost have disappeared. For this purpose (i. e., successive instruction) the pupils are divided into two sections; in one the weaker pupils are placed, in the other the stronger; part of their lessons are given in common, part separately. So section A and section B receive thirteen hours' instruction in common (3 religion + 7 German + 2 arithmetic + 1 singing); section A has  $6\frac{1}{2}$  hours ( $4\frac{1}{2}$  German + 2 arithmetic) of separate instruction, and section B a similar amount. One section has a lesson the first hour three days a week, the other section on the other three days. The teacher of the regular school division does not transfer his pupils to these special classes, which help individualization so much, until he has filled out a transfer card of the following form:

FOLK SCHOOL AT MANNHEIM SPECIAL CLASSES.

## Educational progress of the child in the system of special classes.

*1. Personal history of the child.*

Name of child-----  
Date of birth-----  
Place of birth-----  
Religion -----  
Name of father or guardian-----  
Position of father or guardian-----  
Parents' residence-----

*2. Home conditions of the child.*

Are both parents still living?-----  
Has it a stepfather, stepmother, only a father, only a mother; is it an orphan, and under some one's care?-----  
Is its education and care neglected?-----

*3. Previous school attendance.*

Has it attended only this school?-----  
Did it come from some other place? (from what school, class, and in what school year was it?)-----  
Was its attendance in any class irregular? (Why?)-----

*4. The child's backwardness.*

In what classes did it remain more than one year? (State briefly in what subjects its work was unsatisfactory.)-----

*5. Reason for its backwardness.*

On account of lack of talent?-----  
On account of lack of application?-----  
Other causes (illness, transfer, home conditions)-----

*6. Former diseases and accidents.*

Fits? Dizziness? St. Vitus's dance? Brain troubles? Head injuries? Rickets? Diphtheria? Measles? Scarlet fever? Whooping cough? etc-----

*7. Physical anomalies and signs of degeneration.*

Signs of paralysis? Headache? Speech? Hearing? Eyesight? Organs of smell? Swelling of glands? Trembling and twitching of the muscles? Curvature of the spine? Malformation of the limbs? Chronic diseases? etc-----

*8. Psychical peculiarities.*

Cleanly? Attentive? Good willed? Sociable? Mendacious? Thievish? Dull? Excitable? Irritable? Sensitive? Passionate? Whimsical? Bashful? Lazy? Imaginative? Forgetful? Superficial? Mean? etc-----

*9. Special inclinations and abilities.*

Singing? Writing? Drawing? Arithmetic? Hand work? etc-----

10. *Grade of school work reached.<sup>a</sup>*

	1.	2.	3.	4.	5.	6.	7.	8.
School year .....	19—	19—	19—	19—	19—	19—	19—	19—
Class .....								
Teacher.....								
Number of pupils.....								
Location.....								
Industry .....								
Conduct .....								
German.....								
Arithmetic.....								

<sup>a</sup> The grade which the child reached in all his school work is to be entered here. This is therefore a certificate for the past school years as well as for the future. For the past years the entry is made at the time of the child's transfer to the special class; for the future, at the conclusion of the school year. Should he return to a regular class or leave the school, a note is to be made of his leaving certificate; if, on the contrary, he merely changes to another special class, no entry is made to that effect.

3. If it happens that a child in the lower "repeating" classes can not be benefited at all because he is very meagerly endowed mentally, he is transferred, with the cooperation of the school physician, to an auxiliary school class, of which in the school year 1904-5 there were four in existence, with a total of 67 children. From this small number of classes we may conclude that the Mannheim method of procedure leaves a considerable number of pupils in the repeating classes in the regular school who at Halle, and probably in other cities, would have been transferred to the auxiliary schools without hesitation.

The auxiliary school classes at Mannheim, therefore, are attended by children who show very inadequate mental development; and yet we must not assert that idiots are sent there. It seems to me that the school organization at Mannheim tends to change the whole procedure of admission to the auxiliary school classes which up to this time has been customary. Perhaps the Mannheim method is the first to take into the auxiliary school only those pupils who belong exclusively there, and the pursuance of it has the same result as formerly in the case of institutions for idiots; for when the auxiliary schools were founded the institutions for idiots lost (to those schools) a number of their inmates who were capable of being educated—those who were not the worst, not to call them "show pupils." Now, according to the Mannheim plan, the auxiliary schools are not to admit those pupils who, to be sure, are inferior, but whose minds, which up to this time have been benumbed by all kinds of limitations, can still be awakened by individual treatment according to

psychological principles. Under this treatment they are still to be helped to accomplish something in a simplified folk school. The future will prove whether the Mannheim course of procedure will have a lasting influence upon that which has existed up to the present. At any rate, the question is worthy of our most careful consideration, for admission to the auxiliary school can scarcely be too carefully guarded. Just as we must avoid having children sent to it who are suffering from a higher grade of imbecility or from idiocy, who are blind, deaf-mutes, or morally depraved, so we must also refuse to admit those who have been kept back only by reason of unfavorable school conditions or on account of illness, and yet are not to be called mentally subnormal.

Let, then, admission be according to the plan used either at Halle or at Mannheim; well for those children set apart if, while still at the regular school, they did not frequently hear it said, "Oh, in the auxiliary school, with the stupid children, you don't have to learn anything!" If the auxiliary school and its work have hitherto been treated with scorn, if even school people regard it as a school Siberia, we can understand the disfavor with which it is viewed by the children and their parents. Though many parents have a very good understanding of what the auxiliary school may mean for their children, as well as for themselves, yet we can not expect parents in general to appreciate its value. Therefore we need not be surprised if many of them object to their children being placed in the auxiliary school. Parental pride, along with misunderstanding, thwarts a great deal of the school work. And when the school raises doubts and suspicions as to the parental darlings being altogether "sound in their minds," and in addition to this neighbors speak now and again of a "dunce school" or "mad school," to which they wouldn't want to intrust their children, the best-intentioned counsels of school people and physicians are of no avail; vanity and false shame prevent them from seeing the matter in its true light. Therefore it is advisable to ask the parents' consent before the children are finally admitted to the school, for as yet they can not be forced to send them to such a school. The stubborn opposition of some parents makes us wish, however, that there might be laws passed which would give over to the auxiliary school, even against the will of the parents, such children as are known to be meagerly endowed. To this end the fourth session of the German Auxiliary School Association (1903) worked faithfully. Among other things, the discussion resulted in the following declaration: "Compulsion should be used only when parents stubbornly refuse to allow their children to enter the auxiliary school, and can not prove that their education is being sufficiently cared for in other ways." Of course compulsion can be

used only when perfectly clear and written proof can be given of the mental deficiency of the child.

Now, this should be sufficiently proved by the question and transfer sheets, when these are conscientiously filled out. If in spite of these sheets there should still be difficulty, the authorities appealed to must then decide on the basis of the sheets handed in to them. To prevent further cases of this kind the authorities (for instance, the school supervisors of the county or district) must make a special regulation by which the following right is granted to the larger communities: Upon the fulfillment of certain definite conditions their agents may command and enforce compulsory entrance to the auxiliary school.

That there may be a uniform ruling in regard to this important matter, all school directors who desire a satisfactory solution of the problem should meet together and ask the central authorities to issue an order which shall be valid for one whole territorial division. Perhaps the current year will bring a much-desired success to the efforts which the president of the auxiliary school association has undertaken to make before the authorities concerned. The admission procedure would then be given a firm basis and much reflection and painstaking on the part of the school people and physicians would be followed by good results.

It would, however, be declaring that the popular common practice is the only one if we were to say that any child should be admitted to the auxiliary school only after he had remained to no purpose one year, or even two years, in the folk school. That experience may be valuable which teaches that the school period offers the best opportunity to recognize a child's normality or abnormality. But must this long testing time be first passed in all cases before a decision can be reached to transfer a child to the auxiliary school? Other experience teaches that by the time a child reaches the age of compulsory school attendance a diagnosis of his abnormal development can be made which will be more or less accurate. Naturally the decision rests more in the hands of the physician than in those of the educator. Many children show sure signs of defective mental development very early. To send these defectives to the folk school when a special institution is at hand for them would be doing them a great injustice. From their first school days they belong in the auxiliary school. If this decision is made and carried out, such an auxiliary school pupil has a great advantage in his school life over that one who must first endure a long martyrdom in the folk school. For the sake of this advantage this second method of admission to the auxiliary school must be called practicable and is to be recommended.

#### IV.—THE PARENTS AND THE WHOLE ENVIRONMENT OF AUXILIARY SCHOOL PUPILS BEFORE AND DUR- ING THE SCHOOL PERIOD.

Taking it for granted that the newly admitted pupils remain in the auxiliary school without interference on the part of the parents, what work is then to be done? For the auxiliary school people the unceasing work of observing the body and the soul of the new pupils begins. But whoever would really know his pupils must first become acquainted with their parents and their surroundings.

A twofold effort must be made in order to be able to understand the parents. In the first place, the auxiliary school principal should send to the official information bureau of the city poor administration a list of the new pupils, with the personal record of each as shown in the admission blanks, with the request that from its records a statement be prepared regarding the character of the parents in question. On the whole, this confidential information may be accepted as true. Two reports may serve as examples:

1. N. N. (dates of birth of parents and children are here given) was punished in 1888 with two weeks' imprisonment on account of injury to the person; in 1890 with one day imprisonment for fraud. In 1901 with one day in confinement for disorderly conduct; his reputation is bad. He associates with a married woman who is living apart from her husband, from which alliance there is a child. The child is idiotic and has been placed in the asylum at Nelnstedter. His wife has a good reputation; she has been suffering for a long time from cancer of the breast. The child's surroundings are as bad as possible.

2. N. N. (dates of birth and vocations of parents and children are given) has frequently been lightly punished on account of transgressions. Since 1902 he has been in the insane asylum at Alt-Scherlitz as undoubtedly crazy. His wife was punished in 1882 for infringement of police regulations; otherwise she is of good repute.

Most of the parents are in hard circumstances. In spite of this, however, in great part they manage honestly to keep their heads above water, as well as those of their often numerous children, with or without the aid of public and private benevolence. Others, however, and of these there is unfortunately no small number, have in various ways come into too close touch with the courts, or are alcohol fiends who hate work and do not lead a model family life.

These facts ascertained, the second effort is made. The mothers or guardians of the children are invited by letter to confer with the school principal at his office. To be sure, there are always some who do not heed such an invitation, but the majority of the mothers appear and also find time for conversation. This conference, at which the class teacher is generally present too, is based on the following definite printed questions:

The children of these parents		Physical defects, congenital or acquired through illness or accidents		Domestic conditions	
Record book No.	Names of the parents	Nature	Defects—	What causes	
	The parents of the child. Information concerning illness, conduct of nurse, desire for drink, nationality, etc., in age, cause of death, etc.	Mental disease, epilepsy and nervous disorders. In the course of life, significant occurrences at birth	Developmental disturbances in the first year of life (What did he learn to walk, speak, etc.), caries of teeth, etc.	Illnesses before school age and in the course of life (What did he learn to walk, convulsions, brain fever, scarlet fever, diphtheria, etc.)	Was the child illegitimate, or ill-treated by its stepmother, only a father, only a mother, or is it an orphan in the care of some one?)
3	3	4	5	6	7
4	4	5	6	7	8
5	5	6	7	8	9
6	6	7	8	9	10
7	7	8	9	10	11
8	8	9	10	11	12
9	9	10	11	12	13

Bringing together, then, the results of these two efforts, the teacher has a working basis and may proceed to become better acquainted with the child who is to be subjected to a pedagogical curative treatment. When mothers do not respond to the friendly invitation of the school principal this basis is built up much more slowly, and the teacher in experimenting and feeling his way must depend upon chance. In Halle I have had quite satisfactory results in my efforts. And if I had on one or another occasion parents before me who remained silent regarding important facts of their life and wished to put themselves in a more favorable light, upon finding that I had got my bearings from the official records they became more communicative and made their statements correspond more closely to the truth. As for the rest, I seldom met boldness or excessive frankness. Many a fact regarding the home life was told with a heavy heart or merely hinted at. Often in deep sympathy and with a certain appreciation of the persons being questioned, I have anticipated answers. Many of the mothers had entered a hard school of life when they married, but they had struggled like heroes against the daily hardships of their existence. Repeatedly at the close of my questions I have had the desire to help and encourage with more than words.

That the information won in these conferences through confidence is to be treated as sacred goes without saying. I again cite two cases.\*

1. Agnes N. is the stepdaughter of a turner. Her real father, a drunkard who was often punished, died of fits. The mother married another drunkard, from whom she separated at the end of four years. At the time Agnes entered the auxiliary school her stepfather was serving out in prison a four months' sentence for attempted robbery. Before this he had often appeared in court on account of disorderly conduct, begging, and injury to persons. The child's mother, although as yet unpunished, is by no means irreproachable in her manner of living, according to the opinion of the authorities. Her answers to my questions, however, did not give the impression of coarseness or cynicism. She has given birth in wedlock to five children, the first three of whom died of convulsions while young. The youngest child, Agnes N., did not learn to talk and walk till the age of four. She has had the measles and evidently has scrofula. Convulsions, with which the child was formerly more afflicted than at present, have left behind a twitching of the head. Her speech is also faulty.

2. Otto and Paul M., brothers. Their father, an occasional laborer, died of tuberculosis. Of twelve children (Otto and Paul being the ninth and tenth) the mother lost five, partly from convulsions, partly from lack of vital energy. It is to be feared that the two youngest children, both girls, will some time have to be sent to the auxiliary school. The birth of the two boys named was instrumental; they suffered greatly while teething, also from measles. Their education has been unusually neglected, because the mother has had to go to work daily. One notices at once a difficulty of speech in the one boy, and of walking in the other. Poverty, with the burden of the sickly father, has played a great part in the abnormal mental development of the two boys.

\* I acknowledge the help of the class teachers in completing the details of these cases, which are later characterized still further.

Many other statements of parents might be cited here in detail. You hear of marriages between near blood relations, of striking differences of age, or of nervous diseases in the parents' relatives. Or the mother tells of all kinds of serious accidents, or of trouble during her period of pregnancy. Sometimes she can not give the number of births exactly, as when there are something more than a dozen or fifteen. It is striking how low the vital energy of such all too numerous offspring is; and even when really and fully developed they are in many ways a prey to all kinds of developmental and infectious diseases. In large families, where the care of the children is faulty, falling out of bed, downstairs, or out of a carriage often plays a fateful part. These accidents often explain clearly the more or less abnormal development of the child. Finally, that alcohol and syphilis leave their impression on the child mind can be suspected rather than proven by the layman.

All of these results of examination, combined with proofs of external bodily failings and defects, can naturally not be established regarding an auxiliary pupil at once. But this or that disclosure from the record gives cause enough for the continuance of observation, in order that the proper vantage ground may be won for an individual treatment during the auxiliary school period.

Foremost among the methods of securing the needed data are the visits to the home, which can not be too strongly recommended, in the first place, to the folk school teacher. These visits have increased value when it is impossible to consult with the mother at the school. How many questions the teacher now has on the end of his tongue! And yet how careful he must be not to appear as a secret-service policeman or detective. It requires a great deal of tact to ask the right questions at the right time. But experience soon teaches how to find out the necessary details. Among these, the time of going to bed and getting up must be ascertained; also whether the child has regular nourishment and whether alcohol plays a part in it; further, what work the child has to do. Not less important are the facts regarding his sleeping conditions.

All of these questions will perhaps not be needed in every family. Experience and observation must suggest the appropriate questions to the teacher. For example, the exceptionally languid appearance of a pupil will lead to observations regarding his sleeping conditions. The teacher's visit to the home reveals two facts: First, the child is kept at work folding paper during the hours he is free from school. (This is also the parent's business.) Instead, then, of recuperating his energies in the fresh air, he has to sit in a damp room and try to earn money. Secondly, the 12-year-old boy has to share his scanty bed with a 10-year-old sister and an elder brother.

The report of the observant, zealous teacher causes a general questioning in the auxiliary school regarding outside work and conditions for sleeping. This questioning finally broadens out into a research regarding the following conditions: Does the child sleep alone in the bed (age and sex of his bedfellows)? How many persons sleep in one room? Is there an available separate bedroom? Does he see his father before school hours? Does his mother prepare a warm drink for him for breakfast? Is outside work done before or after school hours? What time does he go to bed? Get up?

The resulting answers, indefinite and unreliable as some of them always are, throw a certain light on the so-called environment of our auxiliary school pupils fully sufficient to place the work of the auxiliary school teacher under the head of "home missions of a practical Christianity." But a person must have looked into this environment before he can begin the work in a personal and, therefore, successful manner.

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#### V.—HEALTH CONDITIONS OF AUXILIARY SCHOOL PUPILS.

About the time that we are trying to find out the home conditions of the pupils before they entered the auxiliary school, we must determine also their physical development. This is carried on with the help of the auxiliary school physician. This is not the place to discuss the necessity for a school physician. The question here is to show the position and duties of the physician in the auxiliary school. In Halle we were persuaded that such a physician was necessary, although the numerous polyclinics of the university had rendered service in many ways for years and could still do so. The work of the auxiliary school physician, who was appointed four years ago, is regulated by an order drawn up by me and approved by the municipal council. It reads as follows:

##### THE DUTIES OF THE AUXILIARY SCHOOL PHYSICIAN IN HALLE.

1. The school physician must watch over the condition of the pupils' health as well as the hygienic conditions in the school.
2. A physical examination of all children entering the auxiliary school is to be made as soon as possible after their entrance, at most not later than three weeks thereafter. This examination is to be repeated every quarter.
3. The results of the examination are entered on a printed form of health record, which accompanies the child from class to class until he leaves the school. If a child needs special medical treatment, a note is made to that effect upon his record, and it is reported to the principal. This health record, when filled out and provided with a number corresponding to the number in the register, is placed in the principal's office, where it may be consulted by the teachers or the physician of the auxiliary school.

4. In addition to these periodic examinations, the school physician must make weekly visits to the school. The teachers are to be informed of his presence there by the principal, and must then present their observations to him, especially those which are of such a nature as to give rise to medical advice. The hours for consultation are decided upon by the principal and the physician.

5. The school physician does not treat the pupils himself; on the contrary the parents are to be informed by printed notices, which must bear also the signature of the principal, that the child should be placed at once under the care of a private physician or sent to a polyclinic.

6. Whenever the physician's advice has to do with the temporary exclusion of pupils from school, or limiting their hours of study, or the assignment of special seats to them, or a resort to curative pedagogical measures, he must arrange the matter with the principal of the school in order to assure compliance with his instructions.

7. At the end of every school year, the school physician, after conferring with the principal, must present a report to the city council in which he is to give a short résumé of his medical supervision, pointing out any special cases and successful means employed.

8. In case the school physician is prevented from visiting the school for more than a week, the city council is to be promptly informed of the fact and a suitable substitute appointed. Three months' notice must be given before the contract with the council can be annulled.

9. The council retains the right to change or extend these duties, with the consent of the school board.

In accordance with this order, some time during the year all the pupils are examined by the school physician in the presence of the class teacher. The examination may take place in the principal's office or in some unoccupied class room. The results of the medical examination are entered in a specially prepared health record, which is made use of throughout the whole school course. It is thus arranged:

#### HEALTH RECORD.

For _____	son, daughter
of _____	age _____
Born (date) _____	
Vaccinated _____	
Vaccinated second time _____	
In the _____	school since _____, 19____

#### EXPLANATION OF THE FORM

Columns 1, 3, 4, 5, and 10 and the head of the sheet are to be filled in by the teacher, the rest by the physician.

Columns 3 and 4 are to be filled in every half year (Correct to a half centimeter and a quarter kilogram respectively).

The other columns are to be filled in by the physician when the pupil enters the school (columns 5 and 8 only when it seems specially necessary), but subsequently only when changes in the child are noticed.

In column 2, for perfect health "good" is to be written; if there is pronounced tendency to disease or chronic diseases, write "bad;" for other conditions write "medium."

1 Class and year	2 General constitution.	3 Height in cm.	4 Weight in kg	5 Chest measure	6 (a) Breast, abdomen (b) Spinal column, extremities. (c) Skin diseases (pustule sites)	7 (a) Eyes, keenness of vision (b) Ears, hearing (c) Mouth, nose, teeth, speech	8 Comments of the physician Suggestions for treatment in school Signs of disease	9 Communications sent to the parents on	10 Comments of the teachers.

If a child is in such a condition of health that medical treatment seems necessary, the principal of the school informs the parents of the fact. The following form of notice, usually sent by mail, has always had very satisfactory results:

By order of the city authorities an examination of your child was made. It was found that he is suffering from . For the health of the child, as well as for the good of the school, it is very essential that .

Halle, (date), 190--

To .

Rector.

With very few exceptions the parents have carried out the physician's suggestions, and the children in question have been placed in clinical institutions or under other medical treatment.

In the course of a whole school year the school physician collects a large amount of experience of interest to him and to the public. This experience he condenses into an official yearly report; one of these reports has been published in a daily newspaper in Halle, and now, with the consent of the author, I quote from it the following:

In the two lower classes of the auxillary school there were 47 pupils from 7 to 9 years of age. Of these, 21, or about 45 per cent, were in poor health, and only 5, or about 10 per cent, were in perfect health. The children from 11 to 14 years of age showed the proportion reversed. The same result appeared when those children were grouped together whose bodily condition could be called perfect. While only 2 of the 47 younger children possessed no constitutional or organic defects, those in the last school year showed the proportion of 13 out of 21.

An especially convincing statement regarding the physical defects of these auxillary school pupils is found in the following summary:

On the whole, only 57 of the 215 children who were in attendance in the auxillary school at Halle during the year 1901 can be said to be free from defects, even if in our definition of perfect we do not consider trivial defects, such as slight difficulties of speech, abnormalities or diseases of the teeth, slight nervous troubles, etc.

In the school year 1903-4 the results showed a still smaller number. Out of 209 children only 11 boys and 15 girls were in a perfect general condition.

Exact measuring and weighing give a clear insight into the faulty development of the body. For measuring height a simple but very useful apparatus has been placed at the disposal of the school physician by the city authorities; it reminds one forcibly of what goes on at a mustering of soldiers. Quickly to determine the weight of the body a scale (upon which the child sits) with a sliding weight is used. With this apparatus it was discovered that of 47 auxiliary school pupils from 7 to 9 years of age 30 fell below the average height (as given by Schmid-Monnard for example) and 31 below the average weight. Only a few reached this average and a still smaller number exceeded it. The report for the year 1903-4 showed that in height 19 boys out of 105 exceeded the average, 30 reached it, and 56 fell below it, while among 104 girls 9 exceeded it, 33 reached it, and 62 fell below it. Of 105 boys 24 exceeded the average weight, 31 reached it, and 50 fell below, while of 104 girls 9 exceeded it, 43 reached it, and 50 fell below it. Similarly small numbers were noted in connection with the chest measure.

While these data can serve only as a basis of comparison and give hints as to a certain connection between mental and physical deficiencies, the following facts are generally of direct service to the pupil himself. The medical examination of the body and its separate parts sometimes reveals diseases about which the parents know nothing. Often, also, suspicions of the teacher, who in his daily intercourse with the pupil can of course note any striking change, are confirmed. In most such cases advice can then be given and often a permanent cure effected.

It was of great consequence that in stubborn cases the school physician could be helped by other city physicians. Various specialists were so deeply interested in the auxiliary school that they placed their knowledge and their art at the disposal of the little patients in the most unselfish way. How often, for example, was a busy oculist called on for aid, and he never refused our request. As a result of his examinations a great many of the pupils were provided with glasses, the cost of which was borne by the city poor administration. It was with great satisfaction that we noted decided progress in the mental development of such pupils. But an ear and nose specialist showed his benevolent spirit, too. In how many cases are swollen tonsils and adenoid growths connected with the pupil's languor or dullness! The researches of M. Bresgens and others have aroused the hope that certain operations upon the tonsils and nose will be able to awaken the slumbering mind of the child. And in the office of the principal at Halle there is a picture which shows types of pupils "before the operation" and "after the operation," in order to illustrate the surprisingly good results of such operations.

Unfortunately, however, one wish, shared by parents and teacher alike, is not realizable—that is, that by the removal of the swollen

tonsils and the adenoid growths every auxiliary school pupil might be restored to the regular school. Unless these pathological phenomena exclude pathological changes or defects in the central nervous system, we can not count on the improvement of the mental powers. But very often, at least, such operations relieve or do away with annoying headaches, nasal speech, or troublesome hardness of hearing, as well as aversion or inability to follow a definite line of work in the school; and so the services of the ear and nose specialist may be of great value to the auxiliary school pupils.

Since the auxiliary school physician most frequently meets with nerve diseases, from abnormal excitability to the most serious phases of brain troubles, it is highly necessary that he should study deeply and carefully all neurological sciences and strive after the skill in diagnosis possessed by a Ziehen or an Oppenheim. On account of the recognized difficulty of accurate diagnosis and the number of forms of nervous troubles, it is very desirable for the school physician to have the aid of a specialist in this department. At Halle we were very fortunate in this regard. A university professor helped the school physician in his examinations and consented to treat children afflicted with paralysis, epilepsy, or St. Vitus's dance.

Up to this time no dentist has been definitely connected with the school. But the children's teeth, as well as their eyes, noses, and ears, should be carefully examined. What surprisingly bad conditions are revealed by the scrutiny of the teeth alone! It is well known how important healthy teeth are for digestion as well as for speech, and therefore it is necessarily true that the dentist, too, can find in the auxiliary school a rich field for the exercise of his benevolence.

Whenever the services of a specialist were required by the auxiliary school, it was taken for granted that, above all, humanity and mercy should spur him on to help us. But with this mercy there must be no inconsiderate desire for research which considers the auxiliary school solely as a rich field for scientific observation and study.

It is easy to see that, in addition to his many-sided professional assistance, the physician is in other ways a blessing to the auxiliary school. By his friendly counsel many improper foods and wrong ways of treating the children have been abolished from the home. In various ways the pupils' school work can be made easier, at his suggestion. The united efforts of principal and physician have also repeatedly succeeded in placing in hospitals or nurseries children who were very delicate or in need of special care, or sometimes in placing them in better surroundings in vacation colonies, and thus making them more capable of resisting the attacks of diseases.

Perhaps more cities with forests in the vicinity will take up the idea which has been put into practice most successfully at Charl-

tenburg, viz., to give lessons in the woods, not merely to individual pupils who need recreation, but to whole classes of the auxiliary school a week at a time. The school physician will certainly consent to the temporary removal of the children to the forest.

From the foregoing statements the duties of the auxiliary school physician can easily be deduced, as well as the number of demands to be made upon him, and his relation to the principal and the teachers. In the main, the physician has to help and advise both the parents and the teachers. To be sure, the latter will often be able to help the physician by their counsel, and in saying this I have in mind not only suspicions of diseases, but also psychological observations regarding the talent and mental ability of the pupils. Every prudent physician will therefore be willing to follow any suggestion made by the principal to attend teachers' meetings or class instruction in order to test his opinions in the light of the opinions of practical school people. In this way many a prejudice can be removed from both sides. If from the start the auxiliary school physician takes the position outlined by Görke, that "the physician must continually help and control the teacher," he is making pretensions which can only do injury to a good cause.

Of course the authorities will intrust an auxiliary school only to a physician who has shown an interest either in school hygiene or child study. But it is often very hard to find an experienced physician who is willing to accept the position of auxiliary school physician; consequently the auxiliary school physicians are mostly younger men. Should these have had as much preparation for their calling as the president of the German Society for School Hygiene requires of a physician for the regular school? Professor Griesbach's requirement is as follows: To be a school physician a person should know the human body accurately and have spent considerable time in a hygienic laboratory—should be a medical man who, on examination, shows exceptionally thorough knowledge of the principles of hygiene. The school physician should also attend pedagogical lectures, and in case he is to teach in higher schools, seminaries, Oberrealschulen, and Gymnasien, he must give specimen lessons, just as every candidate for the teacher's certificate must do. "A school physician who, besides being an able medical man, is also qualified to teach medicine, can and will be of great service to a school in both a pedagogical and a medical way, and will be able to exert a very beneficial influence over the students."

Griesbach very properly lays great stress upon the physician's knowledge of hygiene, but the auxiliary school physician will have to show special ability in psychology and psychiatry, too. However, with a knowledge of pedagogy we could very well dispense, for if it can be only superficial the physician brings upon himself, from the

start, a kind of odium which can help him very little in his position. Rather let the auxiliary school doctor be a physician, and a first-class one at that. No one will question the many-sidedness of his training or regard his duties as of secondary importance. Physician and teaching staff in the auxiliary school at Halle have never thought of comparing the relative values of their work. As soon as the physician realizes that the teacher's highest aim is to better the physical as well as the mental condition of the pupils, he will co-operate straightway in the attainment of this aim. The result of this association will be that the teacher will recognize in the physician a necessary link in the chain of common medical and pedagogical efforts being made. And in this way, in my opinion, the duties and position of the physician in an auxiliary school of one of our larger cities should be conceived.

Should it, on the other hand, be necessary for the auxiliary school physician to give advice and instruction to the school principal with regard to length of recitations, the number and use to be made of intermissions, the order of subjects in the daily programme, etc.? It is to be supposed that all such hygienic requirements are already commonly looked after at these schools. On looking into the real working of the school he will soon see how the matter stands. Sometimes, as an expert in school hygiene, he finds another kind of important work. Suppose a city community is short of funds. It declares that a certain room is good enough to be used for the auxiliary classes. Now, the teacher considers this room entirely unsuitable for many reasons. If the physician makes a statement that he agrees with the teacher, or if he makes a report in professional terms to the health commissioners in case of the larger cities, for example, his word has often more weight than that of the schoolman. In his professional capacity he can accomplish easily what the layman could never succeed in doing.

Therefore it is evident that if physician and teacher have set up the good of the pupils and the more complete development of the auxiliary school as their aim, they will easily find the direction in which the duties of each one should lead.

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## VI.—THE PUPILS OF THE AUXILIARY SCHOOL AND THEIR CHARACTERIZATION.

The teacher of the regular school, especially if he meets his pupils only as their instructor, probably in all cases does not worry very much about the questions: "How does the material of instruction presented affect the pupil, and what interest does he take in his school work?" If he would fully answer these questions, he would have to

pass upon each pupil in the class separately, or as we say, individualize him. But to do this the teacher, to begin with, must be psychologically minded, as Altenburg has set forth so convincingly. The high ideals of the teacher can be all too easily shattered by the great amount of subject-matter to be covered and the excessive size of the classes assigned to him, and he is forced to make continual compromises. He soon accustoms himself to a certain routine, treats his subjects in a most mechanical way, but is adept at showing results which satisfy the lay authorities. As circumstances in general make the man, the teacher first entering upon his duties with a thousand ideals gradually, through the force of adverse circumstances, becomes a mere workman, and compromises his art.

But these teachers who work in a certain rut must by all means be kept out of the auxiliary school. It must never happen that too many subjects or too many children shall cause the teachers to treat all pupils alike. Here the pupil must be judged according to psychological principles by a teacher who knows these principles well, i. e., the growth of every individual child must be watched in the auxiliary school, and noted down in writing, so as to give a picture or characterization of him. One may think that the auxiliary school teacher really can form a pretty good idea of a pupil when his development, before he entered the school, has already been traced out and written down (in the special record), and his physical peculiarities (in the health record) and even his conduct in the regular school (in his certificates from this school) have become known to him. And certainly we can form a fairly reliable picture of the child from all these statements. But this picture is not the picture of an auxiliary school pupil; that must now be attained. As is well known, the child who comes from the regular school does not appear the same in the auxiliary school as he did in the other. Further, the time spent in the auxiliary school is long enough to justify our speaking of a development there.

Now, what written description has been given of this development, and how is, on the whole, the auxiliary school pupil characterized? In Leipzig the characterization of the pupil begins and ends with taking a photograph of the individual. This method of preserving the external appearance of a pupil at the beginning and end of his school course is worthy of consideration. Even yet I remember distinctly one boy who, on entering the auxiliary school at Halle, was almost speechless and without spirit, on account of having been neglected at home; his "anthropoid" appearance incited one at once to take his photograph. After some years the expression of his face had changed so much that his second photograph seemed to represent an entirely different human being. Photography can then give a brief but eloquent characterization of a pupil which will reveal the *developing mind*.

For a long time it was considered sufficient to characterize the pupil by reports, and this system comes down from the time of pedagogical compromises. In most cases the teacher summed up in brief his judgment, until at last a figure, given half-yearly, was used to mark the growth in the mental, moral, and religious life of the pupil. But can figures be so used? This question has been raised often enough before, for every time these reports are made out the inadequacy of figures is felt anew. But tradition is so powerful, and it is so easy to write figures, that even the auxiliary school teacher is loath to give them up. Nevertheless, these meaningless figures must not be used in the auxiliary school, of all places. With this in mind, a school register was planned at Halle which, above all, did away with the use of arbitrary signs in valuing mental qualities, and was designed to offer opportunities for concrete expression and a written statement of experiences and observations. This little book accompanies the pupil throughout his school course and causes the teacher to express his opinion every half year regarding the conduct, attention, and interest of the pupil and his ability to express himself orally and in writing. Remarks regarding any striking peculiarities are followed by notes regarding progress in the various branches of study. But the longer this register is used, the more clearly we see how inadequate it is. Can, then, an observant teacher give in such concise form a description of a pupil, so that another person can form an accurate mental picture of him? It is indeed a truth that here also brevity is the soul of wit. The fewer statements of observations a personal register or individual record requires, the surer are we that every teacher will fill in the form and answer all the questions.

We must remember that the auxiliary school teacher is, after all, only human. At first full of enthusiasm for a matter which seems so important to him, he sets conscientiously to work. But if the work becomes continuous with increasing many-sidedness and the short intervals of time permit but little progress to be noticed, his ardor cools and idealism becomes mechanism. Mechanical treatment of these evaluations of child life leads to their death. Some few plans for evaluations have been published, but for widely different reasons none of these can be recommended. How much scribbling is often caused by these records! To illustrate this, let us present three plans—those of Görke, Kläbe, and Richter:

*Form for the personal records of auxiliary school pupils (by Dr. M. Görke).*

I. PERSONAL DATA.

(To be filled in by the teacher.)

1. Surname and Christian name.
2. Age, place of birth, and religion.
3. Name and station of the father and the mother.

## II. ANAMNESIS (PAST HISTORY).

(To be filled in by the teacher.)

## (a) Family anamnesis

1. Illnesses or causes of death of the parents and brothers and sisters and the present condition of their health.
2. Nerve troubles, mental diseases, deafness and dumbness in the family connections.
3. Are the parents blood relations?
4. Economic conditions of the family.

## (b) Personal anamnesis

1. Course of birth.
2. Nourishment (mother's breast, artificial).
3. Physical development—
  - (1) Tooth formation.
  - (2) When did the child begin to walk?
  - (3) Development of senses.
  - (4) Previous diseases, especially epilepsy and other nerve troubles.
4. Intellectual development—
  - (1) When did he begin to talk?
  - (2) When were difficulties in speech first noticeable?
  - (3) What was their nature?
  - (4) When was mental abnormality first noticed?
  - (5) How was this shown?
  - (6) What is its probable cause (accident, illness, serious mistakes in education, such as the overtaxing of body or mind, or, on the other hand, their inactivity; penury, privation, etc.)?
  - (7) Were the mental anomalies permanent or transient? Were they of a progressive or fixed character?
  - (8) What medical or pedagogical correctives have been employed against these anomalies, and with what result?
5. Ethical development. Did the child show special defects, impulses, and abnormal tendencies (lying, rage, fearfulness, appetite, laziness)?

## III. PRESENT STATE'S.

(To be filled in by the physician)

## 1. Physical condition

- (1) General condition of the body (weight, size, appearance, complexion, nourishment, carriage, muscles, etc.; shape of head)
- (2) Sense activity: (a) Eyes, (b) ears, (c) smell and taste, (d) sensibility to pain and touch.
- (3) Abnormal formation of separate parts of the body (divided palate, defects of teeth, etc.).
- (4) Observable signs of disease (scrofula, rickets, kypho-scoliosis, struma, condition of the internal organs, nasal breathing)
- (5) Are paralysis (or paresis) or contractions present?
- (6) Choreic movements, twitchings.

## 2. Emotional and nervous nature. In making examination, do you come to clues which indicate any defect in the emotions or the will, as excitement, fear, restlessness, low spirits, whimsicality? Are special inclinations or interests shown?

## 3. Intellectual activity.

- (1) Attention.
- (2) How does his thought proceed (with difficulty or quickly, smoothly or disconnectedly)?
- (3) Speech—
  - (a) Does the child speak of himself in the first person?  
Does he use infinitives in speaking?
  - (b) Difficulties of speech (state them clearly).
- (4) Imagination.
- (5) Memory (is there one-sided development)?
- (6) Formation of judgments and conclusions.
- (7) Ideas of number.
- (8) Sense of form.
- (9) Sense of color.
- (10) Has he any idea of time and space?
- (11) What has he accomplished in the several school subjects?

Group III is to be carried on further by the teacher as long as the child attends the school.

*Characterization of pupils (according to K. Kläbe).*

1. Name in full \_\_\_\_\_
2. Date and place of birth \_\_\_\_\_
3. Religion \_\_\_\_\_ Baptized, when? \_\_\_\_\_
4. Vaccinated: First time, when? \_\_\_\_\_  
Second time, when? \_\_\_\_\_
5. Name and station of parents or guardian \_\_\_\_\_
6. Survey of the child's school course

When admitted	School	Class	Duration of attendance	Notes regarding interruption of his school work promotion change of schools etc.
...	...	...	...	...

- A. Remarks regarding the child's development previous to entering school \_\_\_\_\_
- B. Stage of development the child had reached when he entered the auxiliary school
  1. Physical condition \_\_\_\_\_
  2. Mental development \_\_\_\_\_
  3. Frame of mind (disposition) \_\_\_\_\_
  4. Probable causes of the psychopathic phenomena \_\_\_\_\_
- C. Additional remarks concerning the child throughout his school course \_\_\_\_\_  
(Date of such remarks \_\_\_\_\_)

## D. Survey of the child's interest in the school work, his knowledge and skill:

Date.	Easter, 19...	Michaelmas, 19...	Easter, 19...	Michaelmas, 19...
Religion.....				
German language:				
Reading material.....				
Ability to read.....				
Ability to write.....				
Ability to express his thoughts orally and in writing.....				
Numbers:				
Comprehension of numbers.....				
Skill.....				
History.....				
Home geography.....				
Nature study.....				
Drawing.....				
Writing.....				
Singing.....				
Gymnastics.....				
Technical work.....				
Domestic economy.....			-	
Absences:				
Excused.....				
Unexcused.....				
Signature of the class teacher.....				

## E. Psychological exposition of the weak points in the child's endowment-----

## F. Dismissal:

1. Time and causes-----
2. How far advanced in the various school branches-----
3. Remarks in the dismissal certificate-----
4. How has the school made it easier for this child to enter life?-----

## G. Additional notes regarding the pupil after his dismissal from school-----

K. Richter demands the greatest degree of detail and thoroughness in these characterizations. In this connection he states:

For such characterizations of pupils, the following points must be observed:

1. In the case of each child, only those characteristics are to be considered which are peculiar to him; all the others must be left unmentioned. The main points in his moral conduct and his progress are always to be given.

2. Observations and information regarding the home training and its possible influence upon the school training and instruction should be entered in the proper place, as well as regarding differences in the conduct of the children in and out of school toward other pupils when watched and when not watched by the teacher, and regarding other points.

3. Regarding those children who attend another class for certain branches, accurate reports should be made at Easter to the class teacher on whatever concerns his conduct and progress in these branches that is to be noted in the characterization.

4. In each later characterization, only the changes and new phenomena are to be noted which have appeared in the course of the school year, as compared with what has already been noted.

5. The characterizations are to be expressed in language which is concise and to the point.

*Characterization form of K. Richter.*

A. PHYSICAL CONDITION.

Irregularity in structure and function:

1. Of the body in general, in regard to:

(a) Its size, as compared with that of normal children of the same age, and the size of its parts in relation to one another.

- (b) Its posture in sitting, standing, walking.
- (c) Its diseases and defects: Syphilis, scrofula, rickets, tuberculosis, epilepsy, anaemia, indigestion (easily nauseated, evacuation of the bowels and bladder), abnormal condition of the skin (chapped, flabby, wrinkled, abnormal perspiration, etc.), trembling and twitching of the muscles, easily provoked headache, illnesses during the school year, curvature of the spine, chicken-breasted, narrow-chestedness (breathing), club-foot, lack of symmetry in members of the body, paralysis, defective sexual organs (puberty, influence of coming of puberty upon the physical and mental life), etc.
- 2. Of the head: Size, shape, relation between skull and face, form of skull and face (asymmetry), facial expression (play of expression).
- 3. Of the eyes: Distance from one another, inflammation, paralysis of the lids, squinting, rolling, cataracts and spots on the eyes, changeableness and difference in size of the pupils, short-sightedness and weakness of vision, dull, lifeless, restless, vacant gaze, lack of ability to keep the eyes fixed upon one object, color-blindness, etc.
- 4. Of the ears: Exterior (outstanding, large, abnormal rim, folds, helixes, attached lobes, lack of the same), diseases, hearing.
- 5. Of the nose and throat regarding smelling and breathing (chronic catarrh, adenoid growths, ozena).
- 6. Of the mouth:
  - (a) The lips (distorted, thick, hare-lip).
  - (b) The chin (protruding or receding, etc.).
  - (c) The teeth (number, condition, position).
  - (d) Palate, uvula, tonsils.
  - (e) Tongue (thick, tongue-tied, taste, etc.).
  - (f) Secretion of saliva (slavering).
- 7. Of the skin: Sensitiveness to heat, blows (as in wounds), etc.

#### B. FRAME OF MIND AND CHARACTER.

##### Peculiarities in regard to:

- 1. Disposition: Quiet, serious, sad, melancholy, bad-humored, peevish, sullen, morose, indifferent, sensitive, touchy, soft-hearted, tearful, emotional, whimsical, callous, shy, anxious, fearful, timid, bright, gay, lively, unruly, boisterous, irritable.
- 2. The sensuous feelings and impulses
  - (a) Appetite: Eats too little, refuses food, eats a great deal, greedy, loves sweets, is dainty, chews paper, wood, finger nails, etc., eats dirt, etc.
  - (b) Sexual Impulses: Strongly developed; self pollution.
  - (c) Impulse toward activity: Lack of physical activity, fond of ease, indolent, lazy, easily enervated, sleepy, taciturn, restless, lively, moves convulsively, always playing and toying with things, unsteady and precipitate in movements and actions, inclined to laugh (hysterical), talkative, boisterous.

Automatic movements (swaying of parts of the body), gliding, staggering, drumming, rubbing, movement of tongue and lips, making faces, etc.

Clumsy, awkward, unsteady, ungainly in simple movements (spreading and bending the fingers, grasping, throwing, rising up), weak muscle feeling, faulty memory for connected movements (dressing and undressing), left or right handed.

Imitation (mechanical or deliberate).

(d) Over-developed impulse for collecting articles, kleptomania, pyromania (Kokeln), destroying things, running away, wandering about, contradicting.

3. Moral feelings:

(a) Feelings toward self: With or without self-respect and self-confidence, proud, haughty, honorable, ambitious, vain, love of admiration, boastful, without sense of honor, courageous, bold, cowardly.

(b) Feelings toward others: Conduct toward adults and children; Faithful, excessive love; indifferent to parents, fellows, and familiar events; apathetic, repellent; grateful and willing to acknowledge the kindness of others; polite and obliging, thoughtful, fawning, confidential, suspicious, modest, obtrusive, bold, shameless, disobedient, unruly, perverse, stubborn, indifferent to praise and blame.

Shares others' joys and sorrows, jealous, envious, malicious, scornful, mischief maker, mean, revengeful.

Sociable (pupil-friendships), tendency to avoid others, good natured, inoffensive, fond of teasing, touchy, quarrelsome, unsociable, domineering, leads others astray, fault-finding, tattling, violent, plays underhand tricks, rough, cruel (torments animals).

(N. B. For the sake of brevity, the opposites of the qualities have in most cases been omitted)

(c) Feeling for right and duty: With or without sense of right, duty, and propriety; conscientious, negligent, fickle, thoughtless; shame, repentance; selfish, covetous, deceitful, thievish, generous, dogmatic, arrogant, well or ill behaved, sly; loves truth, sincere, mendacious (from intellectual or moral weakness), hypocritical; behavior in sexual relations.

4. Religious feelings: With or without religious feeling, superstitious, canting, hypocritical, etc.

5. The esthetic feelings: Lack of sense of beauty (shapes, tones, colors), love of that which is ugly and in bad taste, pleasure in rough talk, preference for indecent language; love of order and cleanliness with respect to his own body, clothes, school things, surroundings; promptness.

6. Intellectual feelings: Pleasure in success, displeasure in failure, uncertainty (doubt) regarding the accuracy of his own accomplishments, self-satisfied, self-complacent, overestimating his own knowledge and ability, easily surprised, curious, inquisitive.

With or without spontaneous, energetic impulse, indifferent, without energy and weak of will, dependent upon the impressions of the moment, easily managed and influenced, credulous and easily misled, soon wearied, inconstant and fickle in desires, reluctant, lazy, fond of work, industrious, docile.

#### C. INTELLECTUAL STATUS.

Special characteristics in regard to:

1. Mental capacity in general:

(a) Incapable of training, is he nearer this or the normal?

(b) Symmetry in the development of the main faculties of the mind (memory, powers of thought); irregularity, special weakness or strength of the one or the other.

(c) Time required by mental processes: Slow, mentally inert, averse to mental work, lazy habits of thought, precipitate and rash, flighty, thoughtless.

2. Attentiveness during mental activity; voluntary and involuntary attention: Attentive, inattentive, keenly observant. Indifferent, persistent, soon wearied, consistent, inconstant, easily distracted, jumping from one thing to another, digressive, absent-minded, heedless, only attentive when recalled frequently to the subject.

Interest in the work in general or in particular studies

3. Particular mental powers:

- (a) Conduct on receiving new impressions and sensations; receptivity, quickness and power of apprehension; difficult or easy, slow, quick, incomplete and inaccurate, complete and clear. Superficial in perception and observation. Differences in the various senses. One-sided preference for certain signs.

More or less weak or defective excitability and improvement of old impressions by grasping something new; difficulty of understanding and comprehending sense perceptions or language.

- (b) Power to assimilate, retain, and recall (memory): Hard or easy, more or less complete assimilation of maxims, verses, poems, multiplication table, and such mechanical material, or impression of that gained by work in the several branches of study.

Shorter or longer retention of sense perceptions and images. Forgetfulness.

Many-sidedness of observation; strong or defective memory for names, words, numbers, symbols (letters, figures), colors, places, tones, successions of objects, connected movements, etc. Mental horizon according to its extent, kind, and form

Quicker or slower recollection; faithfulness of reproduction without omissions, inversions, confusion, additions, or the opposite.

(c) Power to work over and digest what has been acquired:

- (1) In thinking: Hard and slow distinction of objects and their special features, their resemblances, similarities, etc., and of the essential from the nonessential. Difficult and imperfect abstraction (formation of concepts), does not advance beyond sense-images; poverty of general notions in certain directions, and in this or that department of study; unclear and vague ideas, confusion and intermixing of ideas.

Accuracy, rapidity, certainty of judgments and conclusions in regard to concrete and abstract things.

- (2) In the activity of the imagination: Weak or easily excited imagination; difficulty in thinking of anything pictured, in imagining things not present, or in placing himself in other times, in strange countries and lands, in the frame of mind of people living under other conditions (biblical history, compositions, etc.).

Imagination when at play (building, exercises in putting things together, etc.), in hand work (change of form and size), in drawing, (form, color).

Fanciful (planning subterfuges, evil reports regarding others, often quite credible).

4. Development of speech:

- (a) The tone of speech as to its strength, timbre, pitch: Gentle, whispering, loud, shrieking; singing, monotonous, false or too much accented; harsh, boarse, screeching; sharp, squeaking, droning, restrained, nasal; high, deep (puberty).

## THE AUXILIARY SCHOOLS OF GERMANY.

Annunciation and rate of speaking. Impure tones, careless pronunciation of end-syllables, slow, long-drawn out, hesitating, jerky, stammering, stuttering (insertion of syllables and words), rapid, run together, rattling, blundering, with the omission or repetition of syllables and words.

- (c) Organic and central defects of speech: Lispings, stammering, stuttering; complete or partial inability to speak (only single sounds, syllables, certain words and phrases can be spoken). Tripping on syllables. Failure to see the connection between sense perception and the word, letter and sound, figure and number, mental image and word; word deafness and word blindness. Confusion of words with each other without noticing it (e. g., for wardrobe (*Schrank*), table; for table, leg, etc.).
- (d) Clearness and accuracy of speech: Clear, connected, parrot-like, deficient vocabulary, inventing words, choice of expressions, use of colloquial expressions and dialect.

Development of feeling for language (*Sprachgefühl*): Difference in ability to understand and speak the dialect and the written language. Mistakes in the order of words, use of the infinitive in speaking, false inflection, use of wrong tenses, prepositions, etc.

## D. DEVELOPMENT IN KNOWLEDGE AND ACCOMPLISHMENTS.

Under this head will be considered the child's attitude toward the subject-matter presented in particular branches, which is conditioned by his mental and physical endowment. Therefore, by reference to the peculiarities given under A, B, and C, we shall now show to what points the chief attention is to be given in connection with the various branches of study.

1. Religious instruction: What religious conceptions, thoughts, and feelings does he already possess? Is it easy or difficult for him to grasp religious teachings? Interest in such instruction and understanding of it, especially in regard to biblical material of the grade in question.

Stage of development of his thought in connection with religious material (distinguishing, judging, and forming conclusions, especially regarding the ethical and religious value of actions and the acquirement of ethical and dogmatic teachings). Understanding, retention, and reproduction of religious material. Application of the results to his own behavior.

2. Realien (subjects affording positive knowledge of things):

- (a) Object lessons: Powers to observe and describe the material presented by nature, model, and picture. Differences in perception through the different senses. Acquired knowledge of names, qualities, activities, purpose, application, use, etc., of things and events in his environment.

Interest and manner of participation in a conversation. Understanding of a conversation regarding things present to the senses or absent, and of those moral or religious impulses aroused by the same.

Thought and imagination in connection with the material presented. Memory for fables connected with it, snatches of poetry, etc.

- (b) Nature study: Power to see and recognize localities and objects in nature, model, and picture. Greater or less possession of ideas gained through his own experience or through instruction. Power of thinking regarding natural objects (relation between structure and function, motive and result, cause and effect, etc.).

(c) "Homeology" (Heimatkunde) and geography: Pupil's ability to observe (what he sees when by himself and what takes place in class rambles); activity of the memory and ability to transport himself (in imagination) into districts previously seen (sense of locality). Skill in transferring his ideas to a map. Skill in finding places on it and interpreting it. Transferal of fundamental geographical ideas in "homeology" to the chart.

Ability to compare geographical objects with each other, and to present to his mind, in absence of a map, the objects in question. Power to acquire and retain knowledge of his home environment and geography.

History: Interest in historical persons, facts, and events connected with our immediate and more remote fatherland, and understanding of the same. Memory for facts, names, etc.

### 3. German:

(a) Reading: Reading book and reading material (knowledge of printed and written letters, formation of syllables and words, reading of sentences and connected extracts. German or Roman type). Grade of mechanical skill in reading, and the intelligent reading of this material. Characteristic errors in reading. Reproduction of selections read, and memory for these.

(b) Correct writing: Copying of written letters and words, with or without knowledge of their meaning. Copying from print (German, Roman). Power in the analysis and synthesis of words. Writing from dictation (mechanical or after reflection). Characteristic errors.

(c) Written compositions: Grade of ability to write down his own thoughts or those of others. Errors in construction of sentences, order of words and thoughts, choice of expressions, etc.

### 4. Arithmetic: Number work (knowledge of the order of numbers, counting, and the writing of numbers). Mechanical skill in the first four rules, stating how large numbers he can use in each. Differences in oral and written arithmetic. Specially good memory for numbers, sequence of the operations and results, or lack of the same. Understanding for the applications of arithmetic. Striking differences between the ability to handle concrete and abstract examples.

### 5. Accomplishments

(a) Calligraphy: Material presented. Knowledge of the forms of letters and their differences. Aptitude for copying. Characteristics of writing (direction, strength, spacing, relative size of letters, regularity of letters, etc.).

(b) Drawing: Net line drawing (straight and curved lines), stigmographic drawing (different distances of points), free-hand drawing. Understanding and copying different directions and sizes, singly and in groups (figures). Manner of performance: Mechanical or after reflection, more or less independent, light or heavy hand, eye measurement, accuracy, neatness. Imagination and taste in the matter of forms and colors.

(c) Singing: Hearing, voice, sense of time, musical memory; special preference for music, singing, certain songs, etc.

(d) Gymnastics. Strength, endurance, nimbleness and sense of rhythm in executing the movements. Behavior during gymnastic and popular games (sociability, defects of character, imagination).

(e) Handwork: Kind of activity. Cleverness in any special line. Special interest in some one kind of activity. Method and manner of execution and degree of skill acquired.

But it is not only the amount of writing required which terrifies one; the teacher who has any special interest in the finer shades of the child's development feels it a burden to have to answer definite printed questions. Let the scheme for a description of a pupil, therefore, be neither too comprehensive nor its questions too finely drawn. It happens that not every auxiliary school teacher can be in a position to propose a perfectly unobjectionable form. Trüper therefore properly urged the joint action of many coworkers interested in the subject (*Kinderfehler*, 1897, 5-6); and if this cooperation led to nothing else than the gaining of some common points of view from which to work out a suitable scheme, this would be a great gain. Unfortunately Trüper's plea was without effect. Few works have appeared since then, and of none of them can it be said that they help toward unity. Perhaps Lay's "individuality list" may serve as a starting point. In his *Experimental Didactics*, Lay works out his list from the following points of view:

**A. Conditions and functions:**

I. Inheritance.

II. Environment—

(a) Family—

1. Nourishment (mistakes, alcoholism).
2. Illnesses.
3. Amount of sleep (its depth, room, bedfellows).
4. Play and recreation (kind, time, work outside of school, private lessons).
5. Bringing up (parents' view of life, mistakes, examples).

(b) Fellow-men—

1. Friendships and playmates.
2. Public life (street, religious and political companionship).

(c) Nature—

Natural surroundings (of the home, of place of residence).

III. Correlations of the sensory-motor mechanism—

- (a) Physical and psychical energy.
- (b) Exhaustibility.
- (c) Talents.
- (d) Traits of character.

**B. Physical qualities:**

General, constitution, size, weight, abnormalities, diseases.

**C. Mental qualities:**

- I. Sensory : Type of observation.
- II. Associative : Attention, memory, Interest.
- III. Motor : Movements, dexterity, actions.

While previous proposals dealt with details, Lay's plan rises to a certain generality as a logical structure. Direct reference to the departments of study is wanting to it. This apparent defect is to be greeted as an advance. In Halle it is just the necessity of entering up in the register every half-year a concise criticism of the work in each subject which showed the inadequacy of that method. For example, What can the teacher say regarding progress in religious

instruction? Is he to look over the work covered and then write: "N. N. has learned well or poorly a number of biblical stories, parts of the catechism, verses of songs, and maxims?" Or is he rather to emphasize the greater appreciation of the subject-matter? Or, finally, could a measure be applied to the increasing harmony between the childish deeds and the religious and moral imperatives? I am constrained to think that the auxiliary school teacher is not at all qualified to indicate exactly progress made in the department of religion. In examining other branches of study one will come upon similar difficulties, and straightway speak of the trouble in making these reports in the auxiliary school.

Although Lay does help the teacher out of this trouble, still many other difficulties remain unsolved by his plan. If only every teacher who fills out this "personality list" possessed all the psychological insight which the composer of the questions presupposes! Besides this, the many-sidedness and breadth of the points of view may cause the old scruple to rise that more writing is required than is absolutely necessary. But perhaps Lay's plan can be simplified and so made more practicable. Of course there is always the danger that an attempt at simplification will result only in abbreviating the logical structure and not in building it up anew. Still, if an attempt is made later it may at least incite others to continue the critical work. Perhaps at one of the future meetings of our auxiliary school association this important question, so vitally connected with the good of the auxiliary school, will be taken up and made the subject of general consideration.

To begin with, the whole field included under Lay's title of "physical qualities" may be taken away from the teacher and given to the school physician. The health record, as illustrated above, can at any time be consulted by the principal or teachers of the auxiliary school, so that the necessity of an isolated entry by the physician is excluded. So there remain only three main divisions for the teacher, the first of which, "inheritance," is to be treated summarily. The other two are to be treated under the following heads: Environment (family and home): 1, vocation; 2, food; 3, number of children; 4, illnesses; 5, parents' views of life; 6, recreation, work, and associations. Inheritance in sensory and motor fields: 1, physical and mental powers of resistance; 2, power of observation; 3, attention, memory, special interests; 4, movements, skill, actions, speech; 5, traits of character.

It might be of interest to look again at the two pictures of pupils, which we already know, from the point of view of Lay's proposals. In the broader framework, Agnes S. would appear as follows:

I. A. S., born December 24, 1895, has evidently inherited the effects of alcoholism.

II. Her father worked at odd jobs, and died under the influence of liquor. The mother, not of irreproachable reputation, married again, and this time an iron turner, who had often been punished for drunkenness. At present she lives separated from him. The food in the family has always been insufficient. The earnings do not yet permit any improvement. Of the five children born of the first marriage, three died young, of convulsions. The others suffered from all the usual children's diseases. The mother, though not yet more than 40 years old, has been delicate since the birth of the last child. There is only one narrow sleeping room for the use of the whole family. For the two girls there is only one couch, which is far from being clean. Agnes gnashes her teeth in her sleep, and is very restless. During the whole time she is free from school she wanders about the streets with her sister; they are not required to work. The mother is not a model of industry or true motherhood. On the one side of her scale of educational means stand hard words and blows; on the other, pampering is considered to be a sign of mother love. Agnes joins her playmates on the street or in the yard for a little while; then she dreams by herself. Sometimes she embraces her comrades; again, she causes them to cry out by her scratching and biting.

III. As a result of insufficient nourishment, she is physically incapable of resisting disease. We can only speak of her perseverance in mental lines when we mean her fixed tendency to do whatever is forbidden or unseemly. Beyond this, Agnes is easily tired out; she falls asleep during class instruction. Any development of talent is impossible, since she can not follow a train of thought or stick to one idea. At one time she is satisfied with her surroundings; at another, she is quarrelsome and peevish. On the slightest provocation her laughter changes to tears; she even laughs or cries sometimes without any apparent reason. She seems quite unreceptive of any educative influence, and has no sense of moral obligation.

In size, Agnes is below the average of children of her age. In regard to general constitution, she belongs to the middle group. Size, chest measure, and weight do not reach the average. She has a prominent abdomen and a slight curvature of the spine; her walk is unsteady, awkward, and waddling. She squints with her left eye; otherwise eyes and ears are normal. She always keeps her mouth open in breathing; her palate is very convex. Her teeth are irregular. Although no irregularity is found in the passages of the nose, her speech is very defective.

It has been learned from the court records that an assault was attempted upon her.

She receives impressions from the outer world only imperfectly. This defect does not arise from faulty sense organs, but is a result

of mental restlessness. This restlessness causes an inattention and a transciency of ideas, which make continuous concentration upon an object or an occurrence impossible. Even if she seems to try to be attentive in the classes she is soon distracted. Any sound, a sunbeam, etc., throws the child into a new train of thought. Therefore, her memory for words, relations of time and space, colors, and tones is exceptionally weak. Not less faulty is her ability to talk. Her interests are all those of the passing moment; permanent interests have no place in her life. Characteristic of such a person is her mobility; she can keep her limbs quiet only a very short time. It seems as if the physical restlessness must correspond to the mental. Manual skill is not shown, either in feminine occupations or in modeling or working with paper. This want of perseverance always severely tries the patience of the instructor.

According to Lay's shortened plan, another picture would take the following form:

I. Inheritance: Otto B., born 1892; has evidently inherited tuberculosis.

II. Environment: The father, a laborer at odd jobs, died of consumption. The mother goes out washing every day from early morning till late in the evening. She has had 12 children, 2 of whom died of convulsions while teething, 1 from premature birth, and a fourth died young, owing to a fall. Otto is the ninth child of the family. All the births were hard. Besides the prolonged illness of the father, there were many children's diseases in the family. The parents have no idea of the duty of educating their children. Otto never knew the joys of family life. When with his playmates he is amiable just so long as he can play the part of leader. If he thinks he is getting the worst of it he avenges himself on those who seem to be gaining the advantage over him. He is fond of doing mischief, catching on street cars, and now and again he steals fruit from the stands. Since his mother lives on the outskirts of the city, he wanders about a great deal.

III. Inheritance in sensory and motor fields: Through being out of doors a great deal Otto has become very strong, and can walk the long distance to and from school without showing noticeable signs of fatigue. But in the mental field it is different. Many days his inner life seems to be quite extinguished. What he must have known and what must have interested him does not exist for him at all in a short space of time. Then, however, his latent mind awakens and he appears again as a bright scholar. He can extend his field of observation very quickly. As a real street urchin he observes closely every occurrence on the street which interests him at all. Already he knows, too, the value of money. He prefers to spend his spare moments earning money by performing little services. The seventh

commandment is especially hard for him to keep. He is agile at running and climbing. His speech is not normal. In the first place, he pays little attention to the proper formation of sounds and sometimes stammers. Again, he leaves out words here and there or puts them in their wrong places in the sentence. At heart Otto is a kind, good-natured little fellow. Punishments, however, make him sullen and defiant. He is most of all affected if his school companions show malicious pleasure at his punishments. In these cases he acts impulsively.

His physical constitution may, in general, be called good. In size, chest measure, and weight he is above the average. In chest, abdomen, spine, and the appearance of the skin there is nothing peculiar to be noticed. His eyes are astigmatic. The oculist ordered glasses for him, and these very materially improved his sight. His ears are normal. He is a mouth breather, and speaks hoarsely and slovenly.

Otto B. belongs to those types who know how to enrich their inner life from the impressions of the outer world. As long as the subject-matter of instruction is concrete, he is attentive; but lessons committed to memory he can not be trusted to recollect. His defective speech can not, indeed, give him the necessary help. Special interests or abilities which might give hints as to a future vocation have not yet appeared. His activity, which is often uncontrollable, can not be regarded as a diseased condition of the muscles. In his conduct he is in danger of going wrong just as soon as he knows that he is not watched.

Even in this short characterization there may be many a superfluous remark; on the other hand, this or that characteristic point may be missing. It is very hard to draw successfully a pupil's picture, harder perhaps than to show in his proper colors the external man. Therefore repeated consultation in professional circles is very necessary in order to improve the work. And how important this matter is! Think, in the first place, of the auxiliary school teacher! Since he has this advantage over the teacher of the regular school, that he is educator first of all, and only after that instructor, so the opportunity of gaining a basis for his educative measures by means of the personal record must be very welcome. That he can now lay this foundation himself, increases its value for him. Further, every stage of the building from this foundation is a test of its accuracy. Of course this kind of guaranty must not lead him to the conviction that, since some of the premises are correct, divers conclusions can in all cases be taken for granted. And yet by constant observation and consideration, and by carefully adding and taking away little points, a picture can be formed which justifies the teacher in his medico-pedagogical treatment of the child. And this justification secures an ease of mind which raises him in his work far above many who call

themselves teachers. It gives him that pleasure, too, which is always found in scientific research, for every successful pupil characterization serves in its small way the great purpose which the study of the evolution of man has set up.

But it would be only pampering the vanity of the auxiliary school teacher to say that the highest value of the personal record was to be found on this side. All auxiliary school work is first and foremost to serve the pupils. By all this tedious work the teacher should first become really acquainted with his pupils, in order that he may then properly judge and treat them. This aim is essential for any teacher who has to influence a pupil. However, it is also important for any other person who has occasion to work with the child in the school. They all take up the work of others, continue the observations, and test and complete them, so that finally at the end of the school period a fairly complete picture has been made.

But it is not alone during the school period that the auxiliary school pupil is to be judged and treated properly. His whole life long he is entitled to special consideration on the part of others. Therefore at the end of his school career, as occasion requires, employers and military and court authorities are to be informed of the existence of a personal record. Unfortunately these people are still very ignorant of the use of this record. They all wish, more or less, to have numbers, which seem to be no source of trouble to them, as a summary of the acquirements of the school work, while the more elaborate verbal picture of the pupil causes them to first form a judgment, and therefore seems troublesome. If all would agree to send half-yearly reports to the parents of auxiliary school pupils, as is done at Plauen,<sup>4</sup> in order to keep before them that which is characteristic of their children, employers and military and court authorities would gradually have to learn to make use of these personal records in forming judgments. To make it simpler, the auxiliary school teacher or principal can make out an extract which presents briefly the points desired for each particular case. Thus a

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*\* Half-yearly statement to parents.*

[Certificate in words and an expression to the parents of the teacher's wishes.]

Name of pupil: \_\_\_\_\_ Class: \_\_\_\_\_

Conduct and industry: \_\_\_\_\_

Mental progress: \_\_\_\_\_

Absences: Excused, \_\_\_\_\_ Unexcused, \_\_\_\_\_

Auxiliary school (six-graded, regular folk school) at Plauen I. V., Michaelmas,  
19\_\_\_\_\_, \_\_\_\_\_, Teacher.

(Signature of father or guardian.)

statement would have to be made out for an employer (of a servant, etc.) different from that for a master (of an apprentice). The military authorities lay stress on different points from the courts. But what has been so carefully worked out must find appreciation in the quarter where appreciation is due. Unfortunately there are still plenty of examples to show how little the humane, yet real, work of the auxiliary school is appreciated. When people more generally know what pains the auxiliary school workers take to get clear, objective pictures, and when the practical value of this careful work is seen, then the time will have come when a proper value will be placed on individual characterizations. Many a bitter experience, many serious results of disregarding what the auxiliary school could foretell, will point directly to the value of its work. Elsewhere we shall show more fully what an important place the auxiliary school, especially in connection with these pupil pictures, has to fill as a social organization.

## VII.—THE BUILDING FOR THE AUXILIARY SCHOOL.

Since the auxiliary school is the newest of all kinds of school in any town, and always requires less space than the regular school, people are not at all worried when it is given only indifferent accommodations. Generally it is established in connection with a folk school and given rooms which are not needed by it. It must find a place as best it can.

Poor quarters, however, do not always mean that the city authorities wish to put the school in a Cinderella position. They really can not act otherwise. Finances in large cities are rigorously administered, and the ideal conditions for a school organization which is still only in the stage of development, as is the auxiliary school at present, can not so easily be secured, and yet they must be striven after. What, then, would be suitable quarters for an auxiliary school? How could it be best fitted up?

The situation of auxiliary school classes in a district is governed mainly by the size of the district and the location of those parts where the workingmen live. A smaller community will probably find its first and perhaps only permanent special class in or near the folk schoolhouse. When the district is quite large, it is advisable to have two classes or groups of classes, one at each end of the district, so that the children may not have to come too far to school. For the sake of the school government, however, it will be desirable that a number of classes should be built up into a whole school before other combinations of classes are planned. There may be, however, two auxiliary schools in a town under separate management; the number of pupils, of course, determines the kind of organization.

If, however, the special classes would fill a whole schoolhouse, the city authorities would have to decide to erect a special building for the auxiliary school. If those who own the land do not demand too much for it, a favorable location can be selected. The best situation is near the homes of the working people and at the same time near some gardens. Besides the school building, a gymnasium should be erected on this piece of land and these buildings should border on playgrounds and a school garden.

The auxiliary school building, provided with living rooms for the school principal and the janitor, should be a model institution as far as hygienic conditions are concerned. The heating, ventilating, and latrines should be according to the best approved systems. The floors of the halls and rooms should be covered with linoleum, and the class rooms, especially for the younger pupils, are best if arranged in the form of an amphitheater, with suitable seating accommodations.

In addition to well-lighted class rooms the school should have a bathroom, an infirmary, and a workshop. In connection with the bathroom there should be dressing rooms. Enough showers should be supplied so that all the boys or all the girls may bathe at once. The floor of the bathroom should be warmed and so arranged as to prevent slipping.

The room for the infirmary must be large enough to be used for vaccinations and all examinations of the pupils. From time to time those needing special attention or those who have fallen in a faint or epileptics may be brought here. For this purpose mattresses should be provided. A medicine cabinet should contain all kinds of bandages, restoratives, and antiseptics ready for use. All the apparatus necessary for the doctor's examination of the pupils should be kept here, too.

The workshops should be fitted up for modeling and for paper and wood work. For these purposes tables and stools should be provided, as well as chests for the material, for tools, and for overalls, aprons, etc. A joiner's bench and a turning lathe should also be included in the equipment.

It is well to connect the gymnasium with the school by means of a corridor, so that the children can take their walks in any kind of weather. In the gymnasium, as well as in the schoolhouse itself, many wall mottoes and pictures should be hung up, in order to make the time spent in the school as pleasant and stimulating as possible. The same apparatus can not be used in this gymnasium as in a regular school gymnasium. Here it is a case of hygienic gymnastics and requires special apparatus. As an aid to exercises done together a musical instrument should be provided. The auxiliary school must have a playground and a school garden at its disposal, too. Sand

piles make good play centers, and garden beds offer splendid opportunities for the care and culture of useful and decorative plants. Finally aquaria, caterpillar collections, and terraria may be placed on the window sills in order to teach the pupils how to care for animals.

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### VIII.—CLASSIFICATION OF PUPILS IN AN AUXILIARY SCHOOL, AND THE NUMBER IN EACH CLASS.

After thus giving the main requirements for an ideal schoolhouse, the next question to be answered is: How are the pupils to be classified? Whoever has watched the development of an auxiliary school in one of the larger cities will realize how long a time is needed before the weakly endowed pupils can be separated into several classes. Hence every incipient auxiliary school must have only one class for a number of years. In this case the teacher will have to group them in some way, but even with hard work will seem to accomplish very little. For in order that this new special organization may become a part of the city school system and be shown to be highly necessary, the auxiliary school teacher must receive all those pupils whom the public school can and must discard.

Everywhere the problem has to be solved as to what pupils shall be admitted to the auxiliary school. In Halle this part of the development of the organization progressed quite slowly, and we may assume that in other places there will be the same difficulty. Gradually and carefully the pupils are sifted out, and so the picture changes. When the city administration is once convinced that it is not absolutely necessary that there should be pronounced weakness of mind nor very marked signs of abnormal development before a pupil can be admitted to the auxiliary school, then the meshes of the sieve gradually become larger, and the expansion of a special class into an auxiliary school comes about as a necessary and natural result. Even here one must make haste slowly. Possibly this period of development is shorter nowadays, and the desired goal is reached more quickly. But everywhere we must begin with the auxiliary school of a single class. How many pupils, however, would it be proper to put in a class, and how many classes should there be in a fully developed auxiliary school?

Since each class of an auxiliary school makes up a portion of the expenditure of a city community, it is hard for people to come to see that the auxiliary school pupils can really gain benefit from the school work only if they are placed in very small classes. The Prussian minister of education in his publication of June 16, 1894 (mentioned in Chapter I), recommends that city communities should never allow the number of pupils in an auxiliary class to exceed

25. His purpose, in my opinion, is not to frighten the cities away from their praiseworthy efforts to help on the auxiliary school system. Behind his statement lie financial considerations; were it not for these he certainly would have lowered the number very materially.

This ministerial pronouncement has unfortunately been taken as an official norm in many a community, and they like to stick to the number 25. If, however, the teacher wishes to give individual instruction, the number of pupils in a class must be less than 25. This is especially necessary in the lower classes; there not more than 15 pupils should really be taught together. There are already some cities which declare this size of class proper and have introduced it into their schools. It were to be wished that other cities would follow their example, until finally it would be the rule everywhere that not more than 15 pupils were found in the lower classes of the auxiliary school, 20 in the intermediate, and 25 in the higher.

In this statement the membership of the auxiliary school has been implied. This is largely determined by the size of the place. And yet, on the other hand, we can not say that the size of the place absolutely determines the number of pupils. Approximate statistics show that on an average one-half of 1 per cent of the population of a city is made up of weak-minded children. In a city of 100,000 inhabitants, then, there would be 500 pupils for an auxiliary school. Fortunately this estimate does not always hold good; out of 160,000 inhabitants, Halle has only admitted 210 to 225 children to its auxiliary school; Mannheim, a city of almost the same size, cared for only 67 auxiliary school pupils in the year 1903-4.<sup>a</sup> So size alone can not determine the number of pupils in an auxiliary school. Other factors play a part, too.

But the conditions in Mannheim can not be taken as decisive here, because, as we have shown elsewhere, their admission procedure differs from that of Halle. A glance at Wintermann's Survey of German Auxiliary Schools and Auxiliary Classes (published in 1903) would give us more definite information. The industrial towns, as Aix la Chapelle, Barmen, Brunswick, Chemnitz, Cologne, Düsseldorf, Elberfeld, and many others, send more pupils to the auxiliary school than other cities whose population is not made up largely of workmen. Thus the kind of inhabitants and their vocations and manner of life have more influence upon the number of pupils in an auxiliary school than the size of the city.

Suppose, then, that in a city there are 100 or more pupils to be educated in an auxiliary school. How should the organization of the

<sup>a</sup> In the current year about 99 children attend the Mannheim auxiliary school. This is about 0.6 per cent of the total number of school children. There are six classes in the auxiliary school.

school proceed? Though there will be all possible variations in the answer to this question, one thing may be taken as generally recognized and agreed to, namely, the weakest children who have not yet been to school must first be brought together and a kind of preliminary grade formed. This preparatory grade can be in one or two classes. In this division children will first be made ready for school work and taught to talk properly. What form the further establishment of the auxiliary school must take depends not alone on the pupils, but also upon the room, accommodations, etc., at their disposal. In one city, three further stages are added to the preliminary one; in another, four, or even six. In still other places there is a tendency to establish a class for every school year, as is done in the regular school. But eight classes could really not be formed in the auxiliary school, for many children have lost one or two years in fruitless attendance on the folk school. Besides, only few children go through all the classes of an auxiliary school. But the auxiliary school should have as many divisions as possible, and no class should have more than two sections.

The question of organization demands consideration from two points of view, namely, consideration of the religion and of the sex of the auxiliary school pupils. Fortunately, there have as yet been no quarrels in the auxiliary school over the predominance of one or the other religious belief among the pupils. Action springing from love for mankind in general is bound to no dogma. Consequently it will not be necessary to divide the children according to their beliefs. Whenever parents or the clergy of a city desire to have the denominational feature preserved in the instruction, the religious instruction of the child in question must be left to his denominational preceptors, as in the regular school. Experience, however, has taught that very seldom or never do parents or clergy insist on this right. Especially if the religious instruction avoids all dogmas (and this is very necessary in the auxiliary school), the evangelical and the Catholic child can attend the classes in religion together without friction until they reach the age of confirmation.

Just as little as religious faith can the sex of the pupils make demands upon the school organization. Whether it has been from economical or pedagogical considerations, coeducation in the auxiliary school has been regarded as essential and helpful from the very first. Here, then, the problem of coeducation has been quickly solved, and no one has yet found moral or other dangers for those boys and girls who are taught together.

## IX. THE DAILY PROGRAMME.

Even in the regular school it is a difficult matter to plan a schedule of exercises which fulfills the demands of hygiene and at the same time answers the purposes of the school. With the very best intentions it will not always be possible to absolutely subordinate the latter to the former. Besides, in spite of the activity of physicians and school people who are working in this field, there is still little agreement when it comes to answering the following questions: What studies evidently tire the pupil most, and what are sure methods of recognizing and determining the intensity of fatigue? Names like Kraepelin, Ebbinghaus, Lobsien, and Baur, who have made work and fatigue in general the subject of their research; Erismann, Burgerstein, and Schiller, who have included the division and length of recesses in their sphere of work, as well as the order of lessons—these names can serve as proof of this. But it is assumed as a matter of course that weak-minded children show fatigue and exhaustion sooner than normal children. There has been therefore little accurate research in regard to auxiliary school pupils.

The lesson periods in the auxiliary school are of course shorter than those in a regular school. Indeed, in many cases only half an hour is given to each lesson. Further, the arrangement of subjects has been carefully considered; difficult studies should alternate with easier ones. So subjects which require special mental effort and deal more or less with abstractions should not follow one another. As a rule these are separated by introducing technical work, but some kinds of technical work, too, are specially tiring for auxiliary school pupils; consequently, great care must be used in making a choice. If general principles can be set up at all to guide in the arrangement of the programme the following may perhaps be of service:

1. The lessons of the day should be arranged according to the amount of mental energy of the pupil required for each.
2. The first lessons in the morning should not always make the greatest demands upon the pupil.
3. If one subject has specially stimulated one side of the child nature, the following should waken the other side, which up to this point has not been active.

Beyond these few general rules the teacher should be free to change the daily programme in accordance with his discoveries and experiences in the class. For it often happens that pupils come to school half asleep and are then quite unfit for arithmetic or religious reflection; a walk is at such times much more useful than forced instruction in the school.

In auxiliary school literature a fourth, fifth, and sixth point is often deemed authoritative in determining the school programme, as follows:

4. The demand is made that in all classes the same subjects be taught at the same hours. If, then, in one class arithmetic is assigned to a certain hour, arithmetic must be written down in the programme for the same hour in all the other classes. This is necessary, they say, on account of the peculiar abilities of the children; for many a pupil can read but poorly, while he can talk quite well. Others can advance quite normally in arithmetic, while lack of progress in speaking and narrating keeps them far behind their fellow pupils. Shall a pupil, so they argue, be kept back on account of deficiencies in one subject, when he can accomplish more than the others, perhaps, in other lines of work? Rather let each pupil advance in every separate study according to his special ability. Taking it for granted that all the auxiliary school classes are assembled in one building and that the programme is arranged as indicated, the pupil can go into that class in reading or arithmetic, for example, which corresponds to his knowledge or ability. In the other subjects the child remains in his own class and advances there with his own classmates.

This arrangement may have the advantage that individual talents of a child can be brought to a certain development, that it can cipher or read or narrate better than if it had advanced more slowly with its classmates. But what do these single accomplishments signify when compared with his backwardness in other branches? If a general advance were only combined with this other! And what restlessness would come into the school! This wandering from one class to another induces a moving about without restraint which tends to make the school unsettled and so almost excludes any permanent educational influence.

5. The auxiliary school must, further, finish with its lessons in the morning and avoid afternoon instruction. This demand, which has lately been so strongly urged in connection with the regular schools of our larger cities, has especial significance for the auxiliary school. The auxiliary school pupils, in larger cities at least, have as a rule a long way to go from home, because their school is the only one in the place, and long walks to school are recognizedly a burden under which delicate children very evidently suffer. Anyone who has watched the children of the auxiliary school on their way to school through a large city will be loath to require this of them twice a day. Of course it can not always be helped in the higher classes. An afternoon will have to be added if 32 lessons a week are to be secured. In such cases, as in case of weak and delicate pupils, the school directors can relieve the situation to some extent. They may gain the consent of the city to allow those auxiliary school pupils

who are evidently kept back in their school work on account of the long walk to school to ride on the street cars at expense of the city.

6. Finally, intermissions in the auxiliary school's daily programme must be more carefully considered than for the regular school. Generally these recesses are from fifteen to twenty minutes long. However, the main thing is not that during a succession of five lessons lengthy and frequent pauses be made. Still more important is it that these pauses should really be used to refresh and enliven the weak pupils. They should breathe pure air free from dust, eat their luncheon, and move their limbs unrestrainedly by playing together or separately. To help them thus enjoy these recesses, the teacher in charge must always be on the watch. Here he has rich opportunity to make important observations and render valuable service to his coworkers.

## X.—THE CURRICULUM.

For the public school it is no easy matter to answer all the many questions which arise in connection with the curriculum; especially do the choice and arrangement of the subject-matter, as the most important problems of this field, demand much discussion in order to reach any satisfactory solution. The pedagogy of the auxiliary school can claim still greater difficulty. The great differences existing among the pupils' natures give rise at the outset to the question: Is it possible to have a course of study for the auxiliary school which shall be adapted to the so-called average intellect? Of course, even if we can not, in this discussion, reach any definite, valid conclusion regarding particular points, we must recognize the necessity of a plan of work even if it be only in broad outline, for without this no conscious, and so no successful, work can be accomplished.

Formerly it was mainly public school teachers who attempted to draw up courses of study; their work betrayed its origin. They had generally brought with them from the public school a love of the subject-matter which was too great for the auxiliary school. Naturally a great deal of the subject-matter of the public school can not be introduced into the auxiliary school. So they simply took up the scissors and cut off a piece here and there wherever there seemed too much. But in spite of this the worshipper of subject-matter still demanded his sacrifice.

Now, on the other hand, when teachers from institutions giving instruction in hygiene set to work to make a plan they are sure to fail, because they wish to have too little material. Naturally formation of habit seems more important to them than learning, education more valuable than mere instruction; and yet the auxiliary

school should, first of all, be a school in which stress is laid upon knowing many things, even if within narrow limits. So the auxiliary school curriculum must have neither too much nor too little material.

But how much material should it demand? No one will require the auxiliary school to set the same goal for itself as the highest class of the normal or regular school—not even a teacher who has completely fallen prey to didactic materialism.

Then let us lower our demands in general and ask only that the goal of the middle grade of a folk school be reached. This demand, so often expressed, has much in its favor. It emphasizes at the start that the standard is to be kept low. But, on the other hand, it can be said that the middle grade of a folk school does not attain all those several goals which the auxiliary school pupil can reach who meets with some little success. Let one only think of the realistic subjects which must be pursued further in the auxiliary school than in the middle grade of a folk school. Thus we see that it is not so easy to set, even in the most general way, a goal for auxiliary school work. To make any progress at all we must first be perfectly clear as to the answer to this question: What is, on the whole, the purpose of the auxiliary school?

The auxiliary school is an independent institution of education and instruction. It aims to develop in its pupils a standard of conduct which shall not differ from that of a worthy and useful member of human society. To this end all those subjects of instruction should be introduced into the auxiliary school which tend to awaken and control the individual will and impulses to action. According to their nature, such material must mainly be chosen from these subjects as will pave the way to a comprehension of a worthy, purposeful life. Through such a choice over crowding of the curriculum is prevented, as well as mere preparation for a possible vocation. Taking this, then, as our general aim, we can now proceed to assign the scope of the several subjects:

1. Religion: The auxiliary school pupil must be led to an apprehension of the Divine. His duties to his neighbor and to himself, as well as to God, are to be brought to his comprehension. As an aid to his moral and religious feelings and actions he must accept the most important truths of Christianity, so as to be ready for confirmation in church.

2. By practice in observation, speaking, reading, and writing, he should be helped to understand and reproduce orally and in writing whatever he has seen, heard, or experienced.

3. History: By studying the lives of men and women who have worthily served home and fatherland, he should be taught to be willing to sacrifice anything for home and country. From a due

estimation of the present the problems arising out of it for each auxiliary school pupil are to be solved.

4. Drawing is to be used in every class as a means of expressing what the pupil has seen and heard. As such it offers a standard by which progress in intellectual and esthetic fields can be measured.

5. Manual labor: Like drawing, manual training, with its various branches, should direct the activities of auxiliary school pupils into those lines opened up by the other studies, and should facilitate the choice of a vocation later in life.

6. Singing and gymnastics: Both these departments have in the first place special hygienic purposes. Then, however, together they regulate, especially by their rhythmical character, the movements and with these the volitional life of the pupil. Finally, their common esthetic and recreative influence must not be undervalued.

7. Home geography (Heimatkunde) and general geography: The auxiliary school pupil is first of all to be made acquainted with his home surroundings; nevertheless, he must not be ignorant of any parts of the world with which his home has lively intercourse.

8. Arithmetic: Instruction in arithmetic shall present and show the application of those simple problems which are most often needed in daily life.

9. Natural history and nature study: The change of seasons is to be observed in the child's surroundings and the human body is to be made a subject of study, in the interest of his self-preservation and his life in common with others.

Having thus stated the aims of each subject, we must consider what subjects should come together and what should be the order of succession. Even if the old saying still holds good in the auxiliary school, "Proceed from the simple to the difficult," yet the simple must always predominate in the choice of material. A mastery of the whole of the elementary subject-matter of the folk school is not to be thought of. But in the arrangement of even the simple material the striving toward a whole, the outlook toward something complete, must be evident. Even if only small domains of thought can be mastered, they must be domains of thought which are connected with the developing, growing self, so that they form a foundation for the building up of moral and religious personality. But for this, it is not necessary that religious or objective fields should predominate and all others be subordinate to these. Trüper undertakes, it is true, and very laudably, to let the culture epochs, as worked out by Rein, act as centers around which the work is to be concentrated. So for children from 8 to 10 years old Robinson Crusoe is chosen as the basis of instruction in nature study, home geography, as well as for modeling, drawing, singing, German, and arithmetic. Fuchs recommends Robinson Crusoe as a suitable center for the concentration of

the auxiliary school pupils' studies, and really, if you have in mind training for work and for will power and control, you must agree with this recommendation. Robinson Crusoe is a classical model for the auxiliary school pupil with a weak will. But his example has more evident influence in a secluded educational institution than in a public school. The pupils of the latter already see too much of the world about them, with its devices and expedients. As a result, Robinson Crusoe does not concern them so much in his original helplessness as we should like to think. Taking into consideration the fact that many subjects do not adapt themselves to such correlation, but must be treated independently, as history and arithmetic with religion, we see that it is impossible to present plans for concentration as closely connected, organically related wholes. It will be difficult to make the auxiliary school pupil comprehend social aggregations in his vicinity which may, perhaps, be easily seen, such as the groupings of family, work, trade, etc. If, however, such social groups with their common needs are indicated in the plan of studies as home phenomena, and further appear more clearly in the plan of subject-matter, the auxiliary school is thereby preparing for practical life by giving circles of thought which are to a certain extent complete, and therefore effective. This completeness is as difficult as it is necessary. Whoever has undertaken to make a sketch of a curriculum or a course of study will confirm this and know that up to this time no model of value has been furnished. No individual worker will be able, on the whole, to solve the problem of the curriculum. Much preliminary work is lacking—for instance, there is no suitable reading book,<sup>a</sup> primer, or arithmetic for the auxiliary school. Therefore the staff of an auxiliary school must annually consult together and decide what is to be accomplished by the different classes and each half year select subjects of study for them. This laborious work will gradually lead not only to a single core of material, but also to a rich selection of reading and memory pieces and arithmetical problems, which can finally be included in a reader and a sum book. How far this work has progressed at Halle may be seen from the following plans for the first and last school years. (See pp. 88-91.)

A course of study for the last school year presents the most difficulties and is therefore in its aims easily modified. If success has been met with in giving it a local and home background, then at least one kind of unity has been effected. The discovery of further threads of connection between the individual subjects must be held in reserve until it is more fully worked out, as by good fortune can be done on a uniform plan in the auxiliary school.

When we compare the requirements of the course of study in the finishing class with the ability of the pupils of the auxiliary school

<sup>a</sup>Attempts have already been made at Leipzig and in Switzerland.

and see how high the final goals are set in one auxiliary school and how low in another, we must here express a wish that a unity may be evolved from out of this diversity. In this striving we must also decide whether the auxiliary school has to make provision for an education designed to help the girls for domestic service and to prepare the boys for manual labor. Finally, this question must be answered: How is the course of study of the auxiliary school to make room for that work which has to do with correcting errors in speaking, since we know a great many of the abnormal pupils frequently suffer from inability to speak properly. There has been introduced into many auxiliary schools special drill in articulation. In this regard the instructions of the Gutzmanns, of Berlin (father and son), certainly have a value. It may be well, also, to call favorably to mind at this time the prevailing practice which Auxiliary School Principal Godtfring, of Kiel, has introduced in the province of Schleswig-Holstein. Godtfring, who has also repeatedly published articles touching these matters, arranges to correct the speech of the children even before they reach school age. He gathers together into a sort of speech kindergarten all those children who do not speak normally and who will be of school age within half a year. Gradually he separates from these all those who, in spite of opportunity and drill in technical methods of speaking, are not cured of stammering and stuttering. The latter then are put into courses for curative pedagogical treatment, and in case of relapse after being cured are placed in the so-called "repetition" course for individual instruction. Godtfring's plan, which must have a special value in the auxiliary school, has the active support of the school authorities in Schleswig-Holstein.

## Course of study for the first year.

Month.	Religion.	Object lessons	Educational activities.	Arithmetic.	Gymnastics and singing
April.	Plants in spring. How God makes the flowers blossom, and how grow the fruiting plants in springtime. Zeit.	The school garden. What is to be seen in spring flowers, bushes, trees	Play in the school garden. What is to be seen in spring flowers, bushes, trees	Without artificial devices, without assistance, the children learn to comprehend the numbers from 1 to 10 in closest connection with object lessons and practical work.	In accordance with the seasons and the other lessons, in many songs and songs for games are sung by children, D. Biwegungsspiel des Kindergartens Weinbar Boblau Cf. Wie lernen und Krämer. Vierundachtzig volkstümliche Spiele oder mit dem notigen Material für Schule, Kindergarten und Familie. Essen, Bäderfer 1900. Cf. Fr. Seidel. Die Bewegungs- und Lieder des Fröbelschen Kindergarten Wenz u. Leipzig Pichlers Witwe u. Sohn.
May . . . . .	Animals in spring. How God has created birds and all animals for them. Läder Gatt. In goot au esseen Ailein - eind der Welt, Wie in springt Wald und Feld, Nimmst wirst du sie vergessen	The school garden. What is done in summer time. How the garden looks in summer. New activities.	Play in the school garden. What is to be seen in spring flowers, bushes, trees	Observation of occurrences in the school garden during the summer term and during the whole winter term of uses of the objects in question. Reinforced by means of little sticks and the smaller forms drawn for this purpose wooden sticks, four-cornered, in white, round ones, others metal ones, and rings, are to be used.	Cf. F. Müller. Das Zeichnen nach Städten und den Umlaufen Hamburg. Klöns 1905. Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
June . . . . .	How the child should treat God's creatures. Wer nicht auch Tieren Gutes gesetzt und tut, Der ist auch nicht vonganzen Herzen gut.	The school garden. What is done in summer time. How the garden looks in summer. New activities.	The school garden. Man in the garden. Weather; Sunshine, rain.	At first the figures are determined with the aid of the teacher, later these figures are made by the children from memory and finally they invent other forms.	Cf. F. Müller. Das Zeichnen nach Städten und den Umlaufen Hamburg. Klöns 1905. Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
August . . . . .	How God makes the earth fruitful ... Wie die Sonne freundlich leuchtet, Wie sie's warm und fröhlich macht. Der so sehr muss gerne sein.	The school garden. Arbor structures, Arbors, hotbeds, bee-hives, fountains, tools, spade, rake, hoe, watering can.	The school garden. Arbor structures. Arbor, hotbeds, bee-hives, fountain, tools. Spade, rake, hoe, watering can.	The school garden. What autumn brings us fruit and vegetable harvests.	Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
September . . . . .	How God cares for us in spite of the rain. Gott ist bei mir, from Neumanns Lesebuch für das Schuljahr.	The school garden. What I have is the gift of a kind God.	The school garden. What autumn brings us fruit and vegetable harvests.	The school garden. What autumn brings us fruit and vegetables. Signs of autumn in flowers, trees, and animals. The school garden in winter. The snow covering.	Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
October . . . . .	How God causes the fruit to ripen. Thank the Lord, for He is good. Every thing good that I have is the gift of a kind God.	The school garden. What autumn brings us fruit and vegetable harvests.	The school garden. What autumn brings us fruit and vegetables. Signs of autumn in flowers, trees, and animals. The school garden in winter. The snow covering.	The school garden. What autumn brings us fruit and vegetables. Signs of autumn in flowers, trees, and animals. The school garden in winter. The snow covering.	Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
November . . . . .	On the off in autumn. Ein herbstlicher Garten, etc.	The school garden. What autumn brings us fruit and vegetable harvests.	The school garden. What autumn brings us fruit and vegetables. Signs of autumn in flowers, trees, and animals. The school garden in winter. The snow covering.	The school garden. What autumn brings us fruit and vegetables. Signs of autumn in flowers, trees, and animals. The school garden in winter. The snow covering.	Cf. F. Schulz, Der erste Lesen und Schreibunterricht in der Hüttschule. Die Kinderlehrer, 1903, 1
December . . . . .	The Christmas is stor, 'I bring you tidings of great joy, unto you is born this day a Savior.				

Christmas time and its joys.

January .....	Conduct of pupils among themselves: ".Die Kinder in der Schule klein, Die sollen wie die Blumen sein." Pupils' attitude toward the teacher: Obey your teachers and follow them.
February .....	The schoolhouse: The schoolroom, its parts and furniture. The schoolhouse: The schoolroom, its fur- nishing s and their parts.
March .....	Pupils' relation to their parents: Children, obey your parents.

(1)

*Course of study for the last school year*

**THE AUXILIARY SCHOOLS OF GERMANY.**

Month.	Religion.	History.	Geography.	Natural Science
April . . .	Resurrection, ascension, "Jesus, mein Zversicht" (1st verse). "Auf Christi Blutmeißn' allein." (1st verse).	Life in a monastery, monasteries in Halle (starting from a picture).	The Elbe, Saxony. . . .	Our bodies (bones and their care).
May . . .	Whitsun tide. Foundation of the Church; the most important Apostles' "Num bitten wir den heiligen Geist." (1st verse).	Life in a castle Gleichenstein, Moritzburg at Halle	The Elbe and the Oder, Brandenburg and Silesia	Our bodies (muscles and their care).
June . . .	The old Germans become Christians. Beatae Miraculæ spiritus Christiani. (1st verse).	Life in an old German city. Age of inventions	The Vistula Posen, east and west Prussia	Proper breathing and speaking
August . . .	Missions in foreign lands and here in Halle. There shall be one fold and one Shepherd. John x. 16.	Halle and the Thirty Years' war, Gustavus Adolphus	The Baltic Pomerania. . . .	Our nourishment (foods and drinks).
September .	Luther's Life. "Einfeste Burg". (1st and 41st vers.)	The "Great Elector" visits Halle	The West, Hanover, The German Ocean, Schleswig-Holstein	Our digestion (moderation, injurious food).
October . . .	The Reformation in Halle. Psalms, xli. 2	Frederick in Halle French and the inhabitants of the Palatinate in Halle. A. II Francke	The Rhine Rhine province and Westphalia	Sense organs and their care (sight, hearing, smell, and taste).
November .	The Bible and its arrangement 2 Timothy, ii. 13	Fredrick the Great, Rousbach, Legthen	The Elbe Saxon Thuringian states general view of the routes of commerce in north Germany	What to do when ill
December .	Jesus' youth and preparation for His work.	Time of the war for freedom in Halle (Queen Louise)	The Danube, Bavaria, Wurttemberg, Baden, Hesse	Help in case of accidents
January . . .	Jesus' works (miracles)	Scenes from the life of William I	General view of the German Empire	Our homes, their heating and lighting
February . . .	Jesus' works (teachings) . . .	How the German Empire rose Emperor Frederick II	Neighboring States of Germany	Our railways and other modern means of intercourse
March . . .	Jesus' sufferings, resurrection, and ascension. Résumé of the life of Jesus	Scenes from the life of our imperial family	A glance at the globe. German colonies	

## Course of study for the last school year—Continued.

German.	Arithmetic and Geometry.	Hand work	Drawing	Singing.	Gymnastics
(d) Reading Selections for reading are chosen whose content is ethical, religious, and realistic, and which is requested by work in other branches (b), Specimens 5, or 10 specimen selections which are full of meaning are learned thoroughly according to form and content.	(a) Arithmetic. The 4 fundamental rules, up to 1,000 in their simplest relations. Easy examples in fractions, giving special attention to decimals. Apply all in of the rule of three to given classes of the rectangle, parallelogram, trapezium, polygon and circle. The shapes of the triangle, parallelogram, trapezium, polygon and circle are to be recognized and distinguished.	(a) Boys Scroll saw and jointer work, as far as is in keeping with the geometry, drawing, and natural science studied. How to keep our clothes clean and neat. b. Girls. Marking and mending of clothes. How to keep one's clothing clean and in good repair.	The principles of geometry are illustrated by drawings making use of ruler and compass (geometrical drawing). How to keep our clothes clean and neat.	Besides continuous exercises in keeping time and in breathing, a number of such hymns and folk songs are to be learned as songs fit to be learned as the church calendar, the seasons and special holidays or events are likely to give the children occasion to use.	Gymnastic games, accompanied by music as well as exercises with light apparatus are practised. In the autumn term the Gymnastic classes are held in the school garden. Garden work then takes the place of the Gymnastic exercises.
(c) Grammar. In connection with suitable reading selections exercises in copying from the book and writing down their own thoughts are given to help the pupils train for necessary forms for speaking and writing.	(b) Composition. The children are taught to write down their experiences neatly and legibly letters and the simplest business forms are made out.				

## XI.—METHODS OF INSTRUCTION.

Before we can present the methods of teaching used in the auxiliary school we must show how much time each branch of study may claim during the week. This will be most quickly done by giving a summary in the form of a table. In the auxiliary school at Halle we have used the following plan:

*Hours per week given to the several branches of study in the auxiliary school at Halle.*

Branches of study.	Class				
	I.	II.	III.	IV.	V.
Religion.....	2	2	3	3	3
Arithmetic (geometry).....	4 (5)	4	4	4	4
German .....	7	7	6	6	6
Writing.....	1	1	2	2	2
Object lessons.....			4	4	9
Drawing.....	2 (1)	2	1		
History .....	2	2			
Geography.....	2	2			
Nature study.....	2	2			
Singing .....	2	2	2	1	
Gymnastics.....	2	2	2	2	2
Hand work.....	4	4	4	4	4
Total .....	30	30	28	26	22

In the summer term a slight change is made on account of instruction in agriculture. The number of hours for hand work, gymnastic exercises, and singing is shortened so that four hours a week are left for garden work; the school excursions, too, often disarrange the tabulated numbers.

If the instruction given in the higher classes is considered, scarcely any difference will be noticed between the methods of the auxiliary school and those of the regular school; the intermediate classes have much the same management as that which promises success in the lower grades of the folk school; in the lower classes, however, the instruction given in the auxiliary school must be quite peculiar to it. The characteristic points of auxiliary school instruction have been clothed in many imperatives, as the instruction must be objective, concrete, personal, etc. However, these imperatives should apply to all instruction. In the lower classes of the auxiliary school the teacher has still other considerations to occupy him. The children just transferred from the regular to the auxiliary school are either incapable of receiving instruction, or are completely tired of school. Then he has not merely to awaken powers, but also to prevent many an intermittent development from remaining at a standstill. Besides this, he must see to it that his instruction has an educative influence upon the pupil, and this while he simplifies the subject-matter as much as possible. To fulfill these three demands in detail is very

hard, and yet we must strive to do this if we would make our auxiliary school instruction successful.

If mental powers are to be aroused, we must begin with that which stimulates them spontaneously and yet harmoniously, i. e., play. And it must be, of course, play which teaches the children so to use their limbs and sense organs that they will later obey a rational will and lead to such a doing of work as will effect the desired purpose. If one were to begin by making definite demands upon the will and to do work, his misdirected efforts would result only in frightening and dulling the pupil. The spontaneous use of limbs and sense organs first leads the teacher to take the proper direction. At this point he sees clearly how far —to agree with Boodstein—the limbs of a pupil are free in their movements and to what extent the sense organs can serve his attention by making his impressions precise and definite. Therefore we must first exercise the limbs by means of interesting plays, explore the circle of ideas and the powers of the will, that we may then proceed systematically to finally awaken the soul's slumbering powers.\*

These are then guided in various directions, as in that of speaking, drawing or painting, modeling or stick laying. Speech often becomes intelligible and fluent only after long-continued instruction in articulation; for this the teacher requires special preparation. Drawing or painting gives a still more exact test of what the pupil has taken in through his senses than speaking does. When no great demands are made upon him, fear is banished from his mind, and even the most easily discouraged pupil will soon try to do something. Therefore, after a short time the teacher can discover from what he has done what sort of a mind the little artist with the slate pencil has; and the teacher will see, too, the progress the pupil is making, if his drawings are collected and made into a book.

Similar insight into the inner life of the pupil is given by modeling, though this is a great deal more difficult. For this reason it is often left out of the school work; it is important, however, and an attempt should be made to introduce it even into the lowest class. Stick laying is, indeed, much simpler; the Froebelian occupations in connection with the "gifts" are similarly easy. How active are the little minds when they can do something, accomplish something! They must be kept continually active during the lessons, must always be seeing, observing, feeling, measuring, placing, arranging, comparing, distinguishing, hearing, smelling, or tasting, whatever the work

\* Delitzsch recommends an exact psychological diagnosis in order to find out definitely regarding defects in the senses, i. e., of sight, touch, hearing, taste, smell, the feeling of heat, cold, or pain, as well as a diagnosis of the association of ideas, speech, and the emotional and volitional life.

may be. At the same time they must be allowed to talk. While playing at work and working at play they should express their opinions, ask questions, and give answers.

If during the child's instruction he is striving to seek and to find, and to change his impressions into action, into movements, then the auxiliary school instruction serves a double purpose: (1) It avoids mere mechanical training and reducing to a uniform level; (2) it develops the motor center of the brain as the basis of the intellectual, and especially of the volitional, life. The children are then not merely receptive, passive, but always active and interested. They live through in a measure what the instruction offers them. This is the case in the school garden and the school excursions even more than in the class room, and there can not possibly be too many of these excursions. The teacher has but few devices to help him in such instruction; playthings and Froebelian "gifts" are probably his only helpers during the first school year. Outside of these the teacher must be all in all to his pupils. Therefore his task is not easy. Even the primer is lacking, which so early pushes itself in between the teacher of the regular school and his pupils as a dividing wall of paper. Long may it be kept out of the lowest class of the auxiliary school! There nothing should be read, written, or memorized which might be found in a primer. Now, is the pupil not to read so soon, and write, and memorize poems? If there is to be no drill in the auxiliary school, then postpone the "drei Eisheiligen"<sup>a</sup> as long as possible, for they soon kill the happy life—the cheerfulness—of the school. It would probably be early enough if reading and writing were introduced in the second year in connection with block and stick laying. The memorizing of stories and poems can also be left till later if we would continue to shield the children from indigestible "pebble-stones" (Kieselsteine), i. e., give them bread instead of stones. If, however, one desires to exercise the memory of the pupils, suitable selections must be made, and an eagerness to learn them awakened in the children. Trojan, Löwenstein, and others give excellent short poems in their collections (*Kinderlieder*, *Kindergärten*, or *Kinderlauben*).

In this way, and by this method, the teacher may hope to awaken the weak little minds. For those pupils, however, who already have suffered shipwreck in their school life, and of whom people have not hesitated to declare that their mental development was at a standstill, another method of teaching must be chosen. For these pupils the instruction must be such as will take right hold of their

<sup>a</sup> This expression refers to the cold and blighting weather which popular tradition assigns to the 11th, 12th, and 13th of May. The cold of these saints' days is frequently disastrous to budding fruit.—TRANSLATOR.

minds. Therefore, for this purpose nothing colorless must be presented: the teacher must either proceed from the pupil's previous experiences, or make the pupil live through the experiences of others by a progressive portrayal of them. Of course, play and work will still have their places in stimulating movements and ideas, but the stimulations and demands upon the pupil must now be stronger and more vigorous. Moreover, the instruction must vary as much as possible, that the pupil's mental inertia may be overcome, and his self-confidence developed.

Now, let no one think that continual stimulation and change, or ceaseless activity during the lesson, injure the weak intellect rather than benefit it. Let him not be afraid of over-stimulating erethistic pupils (for example). If the teacher retains his fatherly attitude toward the pupils and carefully watches over their mental qualities, requires short steps of them, he will soon be encouraged by their progress. And the progress is not merely intellectual in its nature, no, there will be both physical and mental progress. The instruction in the auxiliary school will therefore be harmoniously educative.

We have already shown that instruction in the lower grades of the auxiliary school needs but few means of assistance; Froebel's "gifts" and all kinds of playthings are in the main to be regarded as sufficient. In addition, biblical illustrations and Stöwesand's picture of the family, as well as pictures from magazines, are to be recommended. The more capable the pupils become the more extensive will be the use of illustrative material, until finally, in the intermediate and higher classes it must be used just as much as in a well-equipped regular school.

To the statement made above, that the method of instruction in the intermediate and higher classes will differ but little from that of the folk school, we wish now to make several additions. It is the general opinion that it is an advantage to connect the new material of instruction with knowledge already possessed, but this connection of old ideas and new must become a matter-of-course rule in auxiliary school instruction. Whenever the case admits it, we must start out from the relations in the home, outside the school, and on the street; an effort must be made to make new material plain to the pupil by means of plastic instruction. Only then will it be grasped and mere verbal instruction kept aloof. Nevertheless, it will often be a long time before the material of instruction can be treated logically. The children are often easily wearied and refuse to respond, much to the surprise of the teacher, who thought he was on the right track. To prevent such surprises it has been suggested that the material of instruction be mastered by a spiral method. This method of working through a subject, which is so much used, can not be regarded as a "cure-all." Only mechanically is a little new connected with the

old by it, and always a return must be made to the starting point. If anyone is concerned with implanting mere word knowledge the spiral method will seem easy and always applicable. If, however, one wishes to educate by his instruction, to use the material of instruction for cultural purposes, he can get along without this method. If only the teacher understands how to bring about immanent repetition, i. e., to present the old in a new form through the new material or to recall it to the pupil's mind from new points of view, he will make progress, slowly, it is true, but surely. The children will not then be wearied by mere repetition of subject-matter, but will be kept always mentally active. The necessary condition for this is a teacher who is himself active and never gets weary or doubts. His task is therefore no easy one, as we have said before.

Since abnormal children often lack clear ideas regarding time, motion, and space, the instruction in all the classes must especially be directed to the development of these ideas by means of systematic and suitable exercises. Demoor has very properly pointed this out. Therefore the date of the birthdays of the children of every class, for example, must be dwelt on; the time of happening of all kinds of school events is to be determined, and the time of day read from the clock. In their movements great stress must be laid upon accuracy and proper rhythm. Music is of great assistance in this, and in the Brussels auxiliary school the employment of music has led to the formation of so-called "eurhythymical" exercises, which we heartily recommend. In order to accustom the eye to relations of magnitude and estimating magnitudes in space, measuring sticks should be kept in the class rooms and the school yard and compared with newly found magnitudes. The school walks are constantly bringing forward new space relations, and gradually help to arrange and make clear the pupils' vague ideas on this subject.

Finally, in characterizing the auxiliary school instruction, it may be well to refer to the thoroughly practical direction which it must take in all its branches, if at all possible. Here we are thinking especially of arithmetic, whose aims have been already characterized as taking their rise in practical life. The teacher of arithmetic has to illustrate the business dealings into which the auxiliary school pupil will later enter. There must be in the school a kind of store,<sup>a</sup> with merchandise, coins, and weights, so that he will become familiar with the operations of buying and selling. Further, now and again a newspaper is to be used in the higher class, so that the growing child may learn something about the labor market, about supply and demand, in order that he may later choose his field of work independently. Brief compositions and letters may also serve the same

<sup>a</sup> Director Schwenk, of Idstein, makes use of such a store in his institution.

purpose, and these will be written willingly and with considerable care.

We must not fail to mention here that the school can render valuable service to the candidates for confirmation by helping them to be less awkward and showing them how to conduct themselves on the street and in all their circles of intercourse. The auxiliary school teacher must do his best to keep his weakly endowed pupils from stumbling on their later path of life and to help them to be as independent as possible. Experience teaches that this kind of effort on the part of the auxiliary school may bring about very satisfactory results.

## XII.—DISCIPLINE IN THE AUXILIARY SCHOOL.

Again and again it has been said that the auxiliary school should retain its character as a school institution, but that, more than is the case with any other, its instruction should be educative. Fortunately, it has not to cover so much ground, and so it can make its subject matter cultural in its influence more easily than the regular school can do, if only the right methods of teaching are used.

Of what value to the auxiliary school pupil is memory work, which burdens rather than inspires? In his case, also, it is true that the ability to do things is better than knowledge. But this ability must be in the service of a rational will, if the youth just entering upon life is to be a useful member of human society.

### (a) THE SCHOOL'S CARE OF THE SOUL.

In this place we are not treating of education in general, but of psychological dietetics, or care of the soul and discipline in the school, in particular. In reality, these are not different in the auxiliary school from what they are in the normal or regular school. The peculiarities of the pupils alone demand a special form. People think in this way: The auxiliary school pupils have weak natures, physically and mentally; consequently they claim consideration and kindness as the only measures in the educational scale. Now, the auxiliary school teacher will certainly have to show great consideration and kindness wherever it is a question of discipline in the auxiliary school. But even in the case of normal children, kindness, if used alone, will have anything but the desired results. How much more is this true of weakly endowed children. They are just the ones who need to strengthen their weak wills by contact with a firm, forceful one. If the teacher always complies with their wishes and submits to their wills, they will never learn to distinguish good and bad.

desires and to suppress their selfish impulses. For this reason there must be rigid discipline in the auxiliary school.

So also refusals and warnings must work upon the child soul. But this must never develop into a drill which kills all love. Moreover, many words too often fail in their purpose, and as a rule impatience works only lasting harm. Calmness and perseverance alone lead to a good end, which is reached so much the more surely if a friendly understanding is first arrived at and friendly stimulation exerted. But in many cases a self-confidence which is almost dead has to be reawakened and supported until it can make its way independently.

The reign of firm discipline in the auxiliary school for the most part does not first show itself in special regulations or warnings. The spirit of order, of time distribution prevailing in it, the spirit of punctuality and accuracy in work, will act effectively, especially if the teacher sets a worthy, forcible example by his faithfulness in little things and his own submission to the whole.

In addition to this example, which is always subject to change, the ever unchanging in art can be brought in as an ally and helper in the auxiliary school. In our sketch of the ideal schoolhouse we said that it was desirable to have the walls of the class rooms decorated with mottoes and pictures. We must now point out (as Professor Sante de Sanctis has proven so convincingly in his annual report of the asylum school at Rome) that works of art, as presenting to the view good deeds and beautiful examples, may also furnish models for the auxiliary school pupil, who so constantly needs good models. Recently it has been very properly brought into prominence that the aesthetic can serve the moral. Therefore, let the walls of the schoolrooms be decorated with suitable pictures, not alone that the school may be made a pleasant place for the child brought up in often miserable surroundings, but rather that by looking so often at beautiful representations his memory for moral things will develop, and art will thus have won a place as an educative influence in the auxiliary school.

But, besides this, the auxiliary school teacher will need to use other and special direct means of discipline; certainly he can not dispense with these. As is well known, there are a great many of them. But he must not use the most extreme measures at once, even if this would shorten the process for him. In the great majority of cases a well-graded system of rewards will lead to more good than a scale of punishments which is consistent, but carried out in a heartless way. Encouragement and praise always help to arouse self-confidence, while corporal punishment often brings about bad results. Consequently corporal punishment has been condemned in all cases, and that not alone by the doctors. But other voices have been raised in

advocating a resort to this means of discipline in the education of abnormal children. Ziehen says: "Bodily punishments are not to be entirely done away with, but they must never be inflicted on the head;" and Schwenk declares: "If, therefore, the teacher is firmly convinced that the pupil knows exactly what has been forbidden, and in spite of repeated commands, reminders, admonitions, and warnings, persists in carrying out his own bad will, then there is no other way out of it, the proverb must be applied: 'Who will not hear must feel,' and, as we know from experience, birch-rod writing (*hölzerne Schrift*) upon the boy's back does him exceptionally good service."

(b) THE SCHOOLS' CARE OF THE BODY.

The physical condition of the auxiliary school pupil demands continually the most careful consideration. Any injury to the body often directly hinders the mental development. Therefore the school physician has not only to establish the health condition of the pupil, but he must also watch him continually. In this the auxiliary school teachers can be of great service to him. They observe the children every day in the classes, on the playground, and in the garden, and if they are good observers and know something of hygiene, they acquire the faculty of noticing changes in the appearance and conduct of their pupils. In cases of sudden illnesses or slight accidents they can use for their relief medicines which the medicine chest contains by the directions of the physician. Their proper use may do a great deal of good and very materially lighten the work of the physician. But much more could be done for the care of the pupils' bodies if the parents would cooperate with the physician and the teachers. It has already been shown how the doctor may influence them when occasion offers. But how often must it be done with the cooperation of the teachers, if the physical condition of this or that pupil is really to be improved! If many parents were not so inaccessible to well-meant advice, special "parents' evenings" might be arranged for in the auxiliary school. How many questions and problems demand a joint discussion and solution, and in how many cases must the parents' consciences be sharpened in order to make them introduce a better method of life into their homes! Unfortunately the difficulties are too great for us to aim at influencing in mass. Therefore there is no way out of it but summoning the individual parents to the school and there giving them words of advice. They may also be greatly helped in deeds by the public care for their weak children, giving some free transportation on the street railways, others a warm breakfast in winter.

The evident necessity of giving tonics to auxiliary school pupils, and the want of understanding on the part of their parents, which

is just as apparent, have brought up the following question: Is the auxiliary school to remain simply a day school, with a limited time of influence, or is it to develop into a boarding school? Worthy representatives of the "curative educational institutions" (Heilerziehungsanstalten) consider the boarding school as the best arrangement. In this connection Heller says: "We desire most heartily that very many auxiliary schools may, in the course of time, even if only gradually, become regular boarding schools." Piper says, to be sure: "To be able to properly answer the question, 'Auxiliary school or special institution?' one must spend years in careful observation of individual cases in even their smallest details. \* \* \* The author indeed recognizes the value of day auxiliary schools, but he also knows that the principals of auxiliary schools are striving to make them boarding schools, and even now try to obtain the good results of the latter by insisting on the schools' feeding the mentally deficient children intrusted to them and on keeping them at the school as long as possible. Serious enough does the question seem to them, 'What becomes of our pupils daily when they leave our care?'" Certainly everyone could agree in general with these statements. The longer the auxiliary school pupil is under the influence of the school, the more effective its influence will be. Our auxiliary school pupils can very seldom be well cared for in their homes. They see there little that is good, and, on the other hand, often receive lasting impressions of unwholesome conditions. So the pupils' withdrawal from parental influence may often be very desirable.

But even at Leipzig, where the pupils are not only fed, but formed into voluntary classes for busy work, this step has not yet been taken, and the school preserves its day character. At Halle also, and probably in other places with fully developed auxiliary schools, this step will not be taken. In spite of certain undeniable imperfections, the day school gives a better opportunity to fit the pupil for life in the hard world than the closed institution. In the school the child must be insured to resist the evil influences of his companions of the street, and even of his family. He must not be kept in leading strings too long. The pupils are not idiots, whose personality can never be firmly established.

Besides all this, institutional education offers many difficulties. Not only is it very expensive, but it demands also greater services from the educators. Even a day school for mentally deficient children makes serious demands upon the teacher, and the results of his efforts are not always certain. Still less certain, perhaps, will they be in an institution, which sometimes is, as Görke asserts, a downright breeding place for certain vices, such as masturbation, talebearing, etc., if, we may add, the supervision is inadequate. At all events,

then, we must preserve the character of the day school, keep the children at school as long as possible during the day, and send them home for the night.

### XIII.—PREPARATION OF AUXILIARY SCHOOL PUPILS FOR CONFIRMATION.

For a long time people have had the idea that mentally deficient children are especially gifted religiously; this gift has even been pointed to as compensation for the lack of purely intellectual ability. Such an opinion has repeatedly been supported by the fact that not merely hysterical children tend to show religious enthusiasm, but mentally weak children seem to be able to memorize a surprising amount of religious material. Consequently, in religious instruction such children have been overfed with biblical history and dogmas. Since this instruction has been given by auxiliary school teachers, however, this overfeeding has been done away with by them. It is probably now generally recognized as true, what was said by Inspector Landenberger in the school and annual reports of the Hygienic Institution for the Care of Mental Defectives and Epileptics, and confirmed by the psychiatrists A. Römer and W. Weygandt, viz., that one-sided overloading of the memory with religious material, as with any other, is harmful rather than helpful.

If the teacher knows how to bring the pupil under the guidance and chastening of God by his religious instruction, and to present the divine guidance and chastening as much as possible from his own experience and his own yielding to discipline, he does not need all the helps which the mentally normal child requires, such as the history of the stages in the development of the kingdom of God, and the established dogmas in epic or lyric form. And even in preparing pupils for confirmation, he does not need to amplify all these. The auxiliary school pupil will neither be an active vestryman, nor will he take part in discussions regarding religions and creeds. But he will manifest his Christianity just as everyone who can be only of the "silent in the land." For this the instruction for confirmation must prepare him.

It must first be determined what ideas the children bring with them from the public school. As a rule their religious knowledge will be small; besides this, the auxiliary school pupils bring with them, from the various classes, varied powers of receptivity and varied degrees of activity. Therefore the teacher must become very well acquainted with the mental qualities of the candidates for confirmation if he would properly estimate and benefit each one. Such an analytic and personal method can not be used, however, when the pastor takes all

the children in hand for preparatory instruction, and the auxiliary school pupil is placed among candidates for confirmation who come from the regular school. The pastor may scatter as many seeds of divine truth as he will, yet the auxiliary school pupil will go away empty. And if, when among his cleverer fellows, he is asked even an easy question, he will fail in these new surroundings and be made sport of. The result will be that not merely a dissatisfied, but a confused and puzzled soul will come up for confirmation. Such results must and can be avoided. Above all things, the weakly endowed pupils are to be kept away from the confirmation instruction in which the normal children share.

If this is admitted, we must next decide who should instruct this group of candidates from the auxiliary school—the pastor or the teacher. In many cities, as, for example, in Halle, a clergyman takes charge of this difficult task. Two days in the week the school principal has a class room made ready for this purpose, so that the preparation for confirmation partakes, from the start, of the character of school instruction. The pastor is in every case the youngest one in the church parish in which the schoolhouse and its auxiliary classes are situated. As assistant pastor, he naturally will not stay very long in this parish, so that frequent changes are made. This young clergyman is not previously questioned by his superiors as to whether he has sufficient inclination and ability to carry on this difficult work. He does it as well as he can; his conscience is the only judge of his performance. Would it not mean a desirable relieving of this conscience if the church authorities in charge should declare: "He alone is fitted to prepare the candidates from the auxiliary school for confirmation who has known the pupils the most intimately and for the longest time?" Since the older clergymen of the parish already are burdened with several confirmation classes, they can not be called upon to give this instruction, which would require special study on their part. In the interest of the clergymen and of the children of the auxiliary school, as well as in the interest of the kingdom of God upon earth, the instruction for confirmation must be given into the hands of the oldest teacher, or of the principal, of the auxiliary school. More or less recently this step has already been taken in Brunswick, Breslau, Kassel, Dresden, Görlitz, and Königsberg. Generally this special duty is given over to the teacher or principal by the consistory, with the privilege of recalling the appointment at any time. Beyond this, the higher church authorities reserve the right of supervision. They cause the city superintendent to visit the school once or twice a year, have him hold an examination a short time before the confirmation, and allow the candidates for confirmation from the auxiliary school to be handed over to their parochial clergymen for, perhaps, three or four weeks more, that

they may take their confirmation vows along with the other children on the general day of confirmation. For this purpose, at the very beginning of his preparation for confirmation, the personal record of each should be given to the clergyman in charge, so that he may in good season influence, as spiritual guide, also those children who have not yet come under his instruction, and their parents.

The confirmation ceremony and the first communion of the auxiliary school pupils at Halle, in the presence of the teachers of the institution, was always quite solemn and impressive, but the ceremony made the impression upon one, however, that the pupils of this institution for the care and education of defectives were being confirmed under special and abnormal conditions. The auxiliary school pupils, at the age of confirmation at least, should feel that they can live among companions of their own age without noticeable peculiarities.

As material of instruction the Ten Commandments are, above all, to be used, and these are to be treated with especial regard to practical life. Kielhorn makes excellent suggestions regarding methods of presenting them to candidates from the auxiliary school. Then, in addition to the Commandments, there are the three articles of the creed, the Lord's Prayer, the command for baptism, and the sacramental words of the holy communion. Of course Luther's explanation of these parts of the catechism is to be used. The purpose of confirmation should be made very clear to the pupils.

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#### XIV.—THE COMMUNITY AND THE STATE IN THEIR RELATIONS TO THE AUXILIARY SCHOOL.

The modern State, and under it the community, have not merely the right and the duty to care for the spreading and deepening of culture; both have also to take charge of the economically inefficient. As a rule, the mentally weak are the economically inefficient; therefore the auxiliary school is no matter of luxury or a play of surplus financial powers. It is rather a humanitarian duty, which demands true manhood. Nevertheless, in the social life of different communities ideal impulses and philanthropic sentiments could not long avail if the real background of self preservation did not speak a plain language.

Naumann very properly says: "To keep up the lowest class of the people means insurance against great losses to the whole." The auxiliary school pupils come from the lowest class of a city community. Since their ability to gain a livelihood is but small if they have not been specially trained and accustomed to work, the whole community has later to take action in their behalf. Either the com-

iliary school pupil becomes a loafer and a tax upon the poor funds or a vagabond upon the public highways. Both are unwelcome members of a community. Not only are they unwelcome, they are highly injurious to the social body. Mental deficiency, even in its lesser forms and aspects, is, as is well known, often the cause of all kinds of misdemeanors and crimes. Weak-mindedness, however, when joined with a dislike of work, is still more detrimental. So by neglecting the mentally and economically inefficient a city incurs expenses for the care of the poor, expenses for the suppression of vagrancy, and, finally, expenses for the maintenance of criminals. This means, therefore, that the maintenance of auxiliary schools is an insurance against greater losses. A comparison of expenses for the year will probably show that money has been saved, for if the efforts to make these weak ones capable of earning a livelihood and thus to add useful members to a community are successful, its powers are increased, even if they are but small factors in the community life. The establishment and maintenance of auxiliary schools is therefore not merely a worthy humanitarian duty, but also a social necessity; and economic considerations generally speak convincingly in the larger administrative bodies. Now, the larger cities have, indeed, shown hitherto a gratifying rivalry in the matter of auxiliary schools, and the State has not only given its customary consent, but has not refused to recognize the newly created institutions.

But the task of the State and the community by no means ends with the present auxiliary school organization. A whole series of longings, which now and again have been clearly enough expressed, must still be realized. In the first place, compulsory attendance on the auxiliary school, which has elsewhere (p. 47) been demanded, should be enforced by the State. Under the conditions specified, parents should be obliged by law to send their children to an auxiliary school. Next, the school period should be extended to the end of the fourteenth year. It has been suggested that it would be well to keep all auxiliary school pupils in the school at least one year after the age of confirmation.

More far-reaching and beneficial, however, is the demand that a special continuation school, with compulsory attendance and a course covering several years, should be established for poorly endowed children. Really it is not advisable to transfer confirmed pupils from the auxiliary school to the continuation trade schools of the cities; that would mean that all those evil conditions would again be brought about which the auxiliary school has tried so hard to do away with. The difference in the school knowledge of the former auxiliary school pupils would of itself be especially troublesome to the teacher of the continuation school. Consequently a special class would have to be

instituted in that school. That religion, reading, writing, and arithmetic would have to be continued in it is probably not questioned by anyone, but at the same time economic, civic, and religious virtues must be cultivated.

Besides these indispensable theoretical duties, the continuation school for poorly endowed children has also purely practical ones to perform. For this purpose, therefore, so-called "preparatory work shops" must be established, which teach objectively the most elementary forms of those trades which are to be most highly recommended to pupils from the auxiliary school. Mental defectives will seldom be able to create masterpieces. It is enough if they only become intelligent underworkers and helpers in straw plaiting, basket making, bookbinding, cabinetmaking, or to stone masons, shoemakers, gardeners, farm hands, bricklayers, etc. Even if many of these trades can not be taught in workshops, visits to places where work is being done, followed by discussions, will partially make up for this. If emphasis is laid upon this practical training, the continuation school for mental defectives can give a vocation to hundreds of unfortunates who would otherwise fail in life, and this vocation will make them efficient and therefore useful and respectable members of human society.

For the auxiliary school pupil, moreover, the choice of a vocation would be postponed for years by the continuation school, and so he would be enabled to make a wiser decision. It is always hard to discover in good season the best line of work for young people. The children of the auxiliary school consent to all kinds of proposals, and the parents seldom show understanding or deep interest in this matter. So the decision often rests with the teacher and the physician. They can surmise, if they can not know exactly, what the child's mental and physical equipment will be, as well as his later desires and abilities. By their counsel they can prevent the changes in vocation which the weak-minded pupil is so prone to make.

The most important thing of all, however, they can not do alone, i. e., seek out suitable positions. How often parents who have been turned away by employers come to the auxiliary school principal and beg him to try to help their child to secure a position. Sometimes, indeed, the school's intercession is of service, but master mechanics do not care to have much to do with apprentices from the auxiliary school. Therefore K. Richter's wish is justifiable: "Would that our master mechanics at home would realize that the children who go out from the auxiliary schools are not as incompetent as is generally thought, but that, on the contrary, they often excel in practical affairs boys taken into apprenticeship from the country or elsewhere without anything being known about them, and doubly reward the

benevolent work of instructing them, if only the master does not leave this teaching in the hands of an assistant, but looks after it himself and is kind and patient with the boys."

A similar wish might be expressed in regard to the placing of girls in stores and factories, as in families which need servants or waiting maids. But will both wishes be considered carefully enough, and will masters and employers of servants use the personal records and individual lists of the auxiliary school? The realization of these wishes presupposes much benevolence of spirit. The State, however, could aid in this, as could private benevolence, to some extent at least. Let the State set aside rewards for such master mechanics as can prove that former auxiliary school pupils have answered all the demands of a guild in their training. According to K. Richter's reports, on special motion of the Royal Saxon minister of the interior, a premium of 150 marks is granted in such a case. Perhaps this example will be imitated in other States. A wider influence can be exerted, however, by the activities of associations in cities having auxiliary schools. In Leipzig, Königsberg, and Berlin auxiliary school societies and associations for the care of backward children already exist. The characteristic portions of the statutes of the associations of these cities are as follows:

**ASSOCIATION FOR THE EDUCATION AND CARE OF BACKWARD  
(MENTALLY DEFICIENT) CHILDREN. (BERLIN.)**

[Chartered association]

**I. NAME, LOCATION, AND PURPOSE OF THE ASSOCIATION.**

§ 1. The Association for the Education and Care of Backward (Mentally Deficient) Children, founded March 26, 1903, has its headquarters in Berlin.

§ 2. The Association for the Education and Care of Backward (Mentally Deficient) Children aims to awaken and promote interest in and understanding of the culture and education of backward (mentally deficient) children and to cooperate in the mental, physical, moral, and economic advancement of these minors.

§ 3. This aim is attained.

**A.**

1. By lectures and discussions of topics in the fields of instruction and education in question, especially of the present practice in the care of mental defectives at home and abroad, by the description of typical institutions and typical organizations before the association, before other associations, or public assemblies.

2. By the discussion of pertinent literature, of ordinances and decrees of State and district authorities.

3. By scientific treatment of pertinent questions, the publication of suitable aids to teaching, etc., discussions in professional magazines and in the daily press.

4. By visiting establishments (classes, schools, institutions) for the care of mental defectives, meetings of societies, and conventions.

5. By establishing a central bureau of information.

## B.

By the development of practical care taking. This care taking shall strive to bring about

*1. For all mental defectives who need it—*

- (a) Provision for better care, clothing, and food.
- (b) The establishment of homes for children, refuges (day homes with board), and suitable care during vacations.
- (c) The placing of the children under proper care, either private or in some institution, according to the nature of the case.
- (d) Their reasonable committal to suitable educational institutions.
- (e) The appointment of care takers and professional assistants, who are continually to watch over the education of the children, have supervision of the proper use of materials at the disposal of the executive council, instruct and advise parents, guardians, care takers, overseers, and employers of labor.
- (f) The formation of school committees in connection with the schools concerned.

*2. For those who have got through school—*

- (a) In cooperation with parents, guardians, and teachers, to advise the children as soon as possible before their dismissal from the school regarding their choice of a vocation.
- (b) To point out reliable foremen and employers of labor who would be likely to exert a beneficial and educative influence upon these youths and further their technical training.
- (c) To take care of these children when they are not cared for in homes.
- (d) In connection with the school, to establish continuation courses, evening technical classes, and homes for apprentices and girls in order to help those who have left school to make proper use of their spare time.
- (e) To help specially needy children to gain a more adequate education by means of stipends, assistance from existing benevolent foundations, associations, and funds.
- (f) To grant aid in special cases of need and when dangers threaten them in public life on account of their deficient ability.

II. MEMBERSHIP.

§ 4. Adults of both sexes, without distinction of vocation, political party, or religion, as well as organizations, officials, and corporations, may be members of this association.

§ 5. Membership may be gained by declaring one's intention to enter as—

- (a) helper
- (b) professional assistant.
- (c) paying member.
- (d) life member.
- (e) patron.

§ 6. Members of the association have equal rights regarding the management of the association. In the general assembly each member of the association has a vote, in the council each of its own members has a vote, and in neither case is vote by proxy permitted.

§ 7. The helpers, who work in connection with the schools, bind themselves to do their utmost to accomplish the purposes set forth in § 2 and § 3, according to a special regulation.

§ 8. When requested by the council or its individual members, each professional assistant must give information regarding his own vocation or his chosen field of work, and also must give advice of his own accord regarding affairs in his department which can have significance in the education of mentally deficient children, as in connection with apprenticeship, labor, wages.

§ 9. The professional assistants and helpers do not need to pay any membership fee. Each year the paying members pay into the treasury of the association any amount they choose, at least, however, three marks.

§ 10. Life members make one payment of at least a hundred marks; patrons at least five hundred marks. Persons who serve the association in any special way may be elected honorary members of the main body.

§ 11. Membership is lost—

- (a) by expressed desire to withdraw.
- (b) for paying members, by two failures to pay the annual fee.
- (c) by decision of the general assembly upon recommendation of the council.

### III. ORGANIZATION OF THE ASSOCIATION.

§ 12. The work of the association is carried on by an executive council and the general assembly. Both bodies can appoint committees and commissions for special service, and to these others beside the members of the executive council may be appointed.

A pedagogical commission, whose president must always be a teacher, enters upon its work at once, and its duties are regulated by special by-laws. This commission has the right to expend, for its own purposes, moneys which have been appropriated for its special work without having to gain the permission of the executive council.

The treasurer of the association is required to keep special account of the same.

#### A. THE EXECUTIVE COUNCIL.

§ 13. The executive council is elected by the general assembly for a period of three years beginning January 1; one-third go out each year. Re-election is permissible. The first elections are for the period from 1903 to December 31, 1905. Lots shall be cast to determine whose terms shall expire in 1903 and 1904.

§ 14. The executive council consists of—

- (a) a president and two vice-presidents.
- (b) a secretary and two assistant secretaries.
- (c) a treasurer and his assistant.
- (d) six other members.

§ 15. A special schedule of work specifies the duties of each member of the executive council.

§ 16. The executive council carries on the current business of the association. It meets when occasion demands, if possible, at least once a month.

§ 17. The executive council represents the association in all its relations, and especially in court. The president and a second member of the executive council may sign papers in the name of the association.

§ 18. The secretary must do all the written work for the association.

§ 19. The treasurer must collect the revenues of the association, take charge of the treasury and the funds of the association, make payment when directed to do so by the president, and keep all accounts.

§ 20. In case any officer is unable to perform his duties his assistant is promoted to the position.

§ 21. All moneys which in the opinion of the executive council are not needed to carry on its regular work are to be invested as securely as are the funds of minor children. The council has the power to decide regarding the withdrawal of such funds from investment.

#### B. THE GENERAL ASSEMBLY.

§ 22. The general assembly meets at least once a year. With it alone lies the power to examine into the affairs of the executive council, as well as into the report of its work (especially of the treasurer), to elect new members of the executive council, and finally to decide regarding the expulsion of a member and regarding changes in the statutes of the association. The report of the treasurer is accepted only after his accounts have been audited by two members of the association appointed each year by the general assembly. These must not be members of the executive council.

#### IV. SPECIAL RULES FOR THE MANAGEMENT OF THE ASSOCIATION.

§ 23. In addition to the regulations laid down in the schedule of work, the following special rules guide in the management of the association:

The president sets the date for the regular meetings of the executive council as long beforehand as practicable. To other meetings the members of the executive council are given written invitations; the call for meetings of the general assembly shall be published at least fourteen days before the date of meeting in the following newspapers. Die Vossische Zeitung, Die Post, Das Berliner Tageblatt, and Der Lokalanzeiger. The executive council may publish other notices of any meeting of the general assembly if it is deemed advisable.

§ 24. The president must call a special meeting of the executive council when three members make a written motion to that effect, stating the object; an extra session of the general assembly when one-fourth of the members of the association propose it in like manner.

§ 25. For the regular meetings of the executive council one-third of the members constitute a quorum; in the general assembly no quorum is necessary.

§ 26. A majority vote carries a measure; in case of a tie the president casts the deciding vote. For the expulsion of a member or a change in the statutes a two-thirds majority of the voting members is required.

§ 27. If a member of the executive council can not or will not accept an office to which he has been chosen or continue therein, the members have the right to appoint one of their number in his place for the rest of his term of office. In like manner the executive council may complete its membership from the membership of the association.

§ 28. The minutes of the executive council are authenticated by the signatures of the president and secretary, those of the general assembly by the signatures of the president, secretary, and three members of the executive council.

§ 29. Only a vote of three-fourths of the members present in the general assembly can dissolve the association after it has been decided in a previous meeting by a two-thirds majority that the question of the dissolution of the association will be brought up at its next meeting.

If the dissolution of the association is decided upon, its possessions are turned over, conserving the rights of third parties, to the municipal authorities of Berlin, requiring them to use them in the spirit of the constitution of this association.

**ORDER OF BUSINESS OF THE COMMISSION FOR THE INSTRUCTION AND EDUCATION OF BACKWARD (MENTALLY DEFICIENT) CHILDREN. (LEIPZIG.)**

**1. PURPOSE.**

The Commission for the Instruction and Education of Mentally Deficient Children aims to gain a pedagogical insight into the real nature of these children, to discover the best methods which lead to the instruction and education of them, as well as the school organization which would best meet their needs.

**2. ORGANIZATION.**

The commission will strive to gain this purpose by holding meetings, by arranging for courses of lectures, by founding a library with pertinent literature, by maintaining a reading room with suitable magazines, by arranging journeys for information, by sending delegates, etc.

Proceedings at meetings will consist of lectures, exchanges of collected experiences, discussions of books, references to new data, specimen teaching, exhibitions of teaching appliances, etc.

**3. MANAGEMENT.**

The executive officers of the commission consist of the president and a vice-president, secretary, assistant secretary, and librarian.

Only teachers may be chosen as presidents and secretaries.

Members of the executive body are elected for one year; reelection is permissible.

**AUXILIARY SCHOOL ASSOCIATION AT KONIGSBERG.**

[According to Fr. Frenzel.]

§ 1. The purpose of the association is to cooperate with the auxiliary school in caring for the physical and mental development of weak-minded children, viz :

1. Of those who have left school.
2. Of those still compelled to go to school.
3. Of other mental defectives, i. e., those who are still very young.

To this is joined the further purpose of spreading information regarding the real significance and value of the auxiliary school and of combating the prejudices of the public against it.

§ 2. The care of boys and girls who have left the Konigsberg Auxiliary School will, among other things, consist in :

- (a) The training of children for a practical calling in life. For this work competent and morally unobjectionable masters, overseers, and guardians must be secured.
- (b) The continuous supervision and education of the children.
- (c) The granting of assistance in cases of need, as well as protection against the dangers arising from their meager endowment, and against those of public life (injuries caused by negligence, acute mental disturbances, alcohol, prostitution, conflicts with the authorities).
- (d) The placing of children under proper care, either private or in some institution, according to the nature of the case.

§ 3. The care of children who are still of school age shall, among other things, consist in—

- (a) Placing them as soon as possible in the auxiliary school;
- (b) Providing better care for the pupils as an aid to the accomplishment of the school purposes, especially by the establishment of a home for children (day home with board) and by providing special care during vacations.

§ 4. To carry on this work helpers are appointed by the association, who are to watch over the pupils and instruct the persons in their environment (parents, guardians, former teachers, etc.).

§ 5. Any man or woman who is interested in this sphere of benevolent activity may become a member of the association. Societies are also accepted as members. Applications for admission are to be made to the president. Every member pays an optional fee (at least 2 marks) during the year.

Notice of withdrawal from the association must be presented in writing before the close of the year to the executive council.

Every member is asked to further the interests of the association as far as he can by spreading information regarding its purposes, and by accepting responsible positions and posts of honor in it.

§ 6. The executive council consists of sixteen members, men and women, including the president, vice-president, secretary, assistant secretary, treasurer, and eleven other members. The executive council conducts all the affairs of the association and holds monthly meetings to discuss the progress of its work.

The members of the executive council are chosen at the first general meeting of the year. If a member withdraws before the expiration of his term of office, some one else is elected to take his place.

§ 7. The association year begins January the first. Meetings are called by the executive council when occasion demands. The principal meeting of the year is held in January, when the secretary's and the treasurer's reports are given and the executive council elected. This annual meeting, the objects of which are stated in the call, requires no quorum. A majority vote will pass any resolution; to change or amend the constitution a two-thirds majority of the members present is required. A two thirds majority vote of all the members of the association is necessary to disband the association. In case of the dissolution of the association, all its possessions are to be handed over to some institution for the care of mental defectives.

At Cologne, too, as well as at Frankfort on the Main and Brussels, the auxiliary school, assisted by associations, cares for the further development of its pupils who have been confirmed and have left the school. It is very important, also, that the auxiliary school teachers should carry on research work regarding the success of auxiliary school instruction, as is done at Leipzig. At the instigation of K. Richter (Leipzig) every six years questionnaires are sent out. These seek information regarding the ability to earn a livelihood, the conduct, and the desire for further education of former pupils who can still be found. Such work causes the teacher much trouble, and yet it furnishes a splendid test of the success of the school as a whole. The results of the Leipzig experiments are gratifying, and encourage us to continue the work along this line. We may expect that such research work will be successful in other cities, too. Of course the results of all efforts in the auxiliary school will be more

certain and greater when State and community, cooperating with private persons, labor in the interest of those mental defectives who have left the school.

Boys must be cared for till they reach the age when they must serve in the army. That such care is very necessary has been proved by H. Kielhorn, and he has also done much to bring it about. Much of the mistreatment of soldiers, which is always mentioned in the press and parliamentary speeches, comes about because the mental condition of the youths who enter the army is not considered. If when recruits were being examined the doctor would only take the time to glance over the "personal records" of the auxiliary school, many an evil report concerning the army could be stopped. And much "ballast," too, many a drag on the military training, would be done away with; indeed, the number of deserters and suicides would be greatly lessened, if the previous life of the recruits were known, on the basis of statements made by auxiliary school teachers. And if only during recruiting, at least the question, "What school have you attended?" were asked, then, if an auxiliary school were mentioned, a special examination would have to be made. To prevent the misuse of this simple method, the military authorities might demand lists of pupils of the auxiliary schools of any particular recruiting district. In all cases it would be wiser not to allow any former pupil of an auxiliary school to serve in the army, no matter how physically capable he may seem; and this from humanitarian as well as from technically military and patriotic considerations.

A special administration of justice is recommended for weak-minded, abnormal boys and girls who have left school. To be sure, while attending the auxiliary school, they should learn to distinguish more clearly right and wrong, good and evil; but a pupil will never leave the auxiliary school with firm principles of right in his mind; his social conscience will always be wavering. At least he will never be able to resist the manifold temptations of his surroundings as a mentally normal person could do. At times, too, physical conditions will obscure his weak sense of right, so that deeds will be committed which human society calls misdeeds, and punishes. The so-called "changed accountability" (*veränderte Zurechnungsfähigkeit*) must here be considered. When the layman, who criticises harshly and hastily, hears this newly-coined legal term, he speaks lightly of a ridiculous lowering of our standards of discipline. Indeed, in view of the increasing number of mental defectives among those to be punished, he sees the administration of justice in a precarious position, if punishment in a great number of cases is lessened as a result of individual consideration of the mental condition of the offenders. But criminal psychology is neither a philanthropic or scientific sport; the knowledge of psychopathology in its connection with misde-

meanors and crimes is nowadays rather a necessity, which can prevent the infliction of punishment from being dislodged from its position. Whoever has watched the development of an auxiliary school pupil will know how easily guided he is, as long as those around him understand him, and further, as long as this or that nervous condition does not handicap him.

Further, the health educator knows how sensitive he may become, and fall into passions of the worst kind, if his short and disconnected trains of thought become confused on account of some cause lying entirely outside the sphere of his will. In such a case the slightly abnormal child will generally act without reflection; but sometimes he may, after mature but one-sided deliberation, do wrong, and then his "changed accountability" can scarcely be assumed. In both cases the judge must decide from a humanitarian point of view, i. e., he must consider the inner man in the offender, particularly if the offender has passed through the auxiliary school in his youth. To regard him as completely responsible, and to punish him as one would a mentally normal person, would be to chastise a cripple merely because he was born a cripple, and to deform him still further. Paragraph 51<sup>a</sup> of the penal code of the German Empire gives the judge the right to take into consideration a mental condition - "unconsciousness" or "morbid excitement," by which free-will action is absolutely prevented. Not a word, however, is said of mental deficiency as a condition which also may hinder the free action of the will. The twenty-seventh conference of German jurists has recently tried to remedy this defect; and upon the advice of Professors Kahl and Leppman (Berlin), the following recommendations have been made to the judicial authorities by Professors Cramer (Göttingen), Kräpelin (Munich), and Kleinfeller (Kiel):

1. Anyone who, at the time of committing a criminal act, is in a diseased condition which is not merely temporary, and which has lessened his ability to see the culpability of his actions, or his power to resist temptation, is to be punished according to the law governing punishment for petty offenses.
2. In the case of young offenders, more extensive use is to be made of the principle recommended by the twenty-seventh conference of jurists, viz, that educative measures, under the direction of the state, be substituted for punishment.
3. Punishment may be postponed according to the general rule permitting it, and we recommend that this rule be applied as widely as possible.
4. Commitment is made to the usual penal institution, where the conditions which brought about mental deficiency are given special consideration.

<sup>a</sup> Compare Bürgerliches Gesetzbuch f. d. Deutsche Reich, par. 821.

5. Mental defectives in the sense of paragraph 1 who do not belong in the usual penal institution are to be committed to a state reformatory, and youthful offenders are to be committed to educational institutions.

6. Mental defectives who are dangerous to society must be kept in suitable institutions until such time as they are considered fit to be discharged, even though their sentences have been fulfilled or remitted.

7. The discharge is only provisional and may be revoked during a time fixed by law.

8. The health of mental defectives who are not dangerous to society must be watched over by the State after their discharge or the remission of their sentence; they may be placed in families or private institutions or given over to specially appointed guardians. Legal limits should be set to the period of such supervision.

9. Special means are to be taken to determine the necessity and advisability of any protective measures to be used in connection with mental defectives, but this procedure is to be kept entirely distinct from that concerned with the deprivation of the right of independent action (on account of mental derangement or reckless expenditure).

In these recommendations a very important rôle is given to the physician in connection with penal sentences. It is desirable, however, that the advice of the auxiliary school teacher be taken as an expert when judgment is to be passed upon those who have formerly attended an auxiliary school. At least the previous life and development of the accused, as shown by the individual records kept by the auxiliary school, must be taken into consideration. Many milder sentences would then be given and further culpable deeds prevented by proper treatment. Perhaps help may come from auxiliary school and other societies in cities whose members can secure legal counsel when former auxiliary school pupils are accused in court. This counsel will always meet with obliging assistance among auxiliary school people.<sup>a</sup>

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## XV. THE TEACHERS AND THE PRINCIPAL OF THE AUXILIARY SCHOOL.

The rapid development of the auxiliary school system explains the fact that teachers and head masters have received no special training for their work. Up to the present this could not be thought of. The appointment officials were always satisfied if they could secure fol-

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<sup>a</sup>The "Hilfsschule," No. 3 publishes an account of the committee for the legal protection of mental defectives. This committee was appointed at the instance of the executive council of the German Auxiliary School Association.

school teachers who were willing to apply for the position. It was taken for granted that a teacher accepted the position on account of his interest in the cause, for the small remuneration given to auxiliary school teachers could scarcely be an inducement. It was thought that interest in the cause, first of all, was the only and best preparation for the work, but still they were anxious to secure the most competent and experienced teachers, especially successful teachers of the lower classes of the folk school. The teacher of these lower classes, therefore, who would give his undivided attention to his new work, seemed to be by far the most suitable person for the position.

Many times experience showed that this was the case. Yet many of the beginners were disappointed; they were neither satisfied with their work nor successful in it. For the auxiliary school, as well as for the teachers in question, it was then fortunate if withdrawal was still possible. In their places new teachers would then have to be chosen and with greater care than before. Next, the auxiliary school authorities were glad if they could secure teachers from among those who had taught in curative educational institutions, as asylums for idiots, institutes for the deaf and dumb, and the blind.

Unfortunately, as a rule but few applications were received from that quarter. Consequently dependence had to be placed almost entirely upon former folk school teachers, and in fact only upon the younger ones of these. For if a folk-school teacher has for years been teaching his pupils as a mass, he has gradually become unfitted for the individual instruction required in the auxiliary school. It is too hard for him to accustom himself to new methods, and he finds no pleasure in the work. In many cases he is thoroughly convinced of the power of discipline and drill in the school. Now, both of these may be very necessary in a large folk-school class, but in the auxiliary school they are injurious rather than beneficial. The auxiliary school teacher must not be an unsympathetic disciplinarian. He must have his own feelings fully under his control. If he is irritable and if anger easily gains power over him, he had better turn his back upon the auxiliary school. In dealing with mental defectives, as well as with poorly endowed children, the teacher must always practice self control. Any expression of impatience, as hasty and harsh words, would be quite useless and his work as an educator quite without effect. Whims and moods must also be suppressed by one undertaking this work. Therefore, a person who is physically sound should be chosen. A nervous, melancholy person would never be equal to the demands made by auxiliary school instruction, and the children would be deprived of all the freshness and brightness which school work should possess.

To be sure, experienced folk-school teachers can become models of self-control and able to spread sunshine and gladness about them;

probably, however, they will prefer to remain in their usual field of work rather than accustom themselves to a new one when well up in years. This adaptation to new situations is sooner to be expected of the newer members of the profession. Even when we were convinced that one of these members, who stood ready to serve the auxiliary school, was really interested in its welfare, and we knew his power of self-control, as also the cheerfulness of his disposition, and speedy adjustment to the new duties could be expected, even then we were not certain that the right choice had been made. Little by little people came to see that experimentation by a teacher is nowhere more injurious than among children who are abnormal and constantly in danger of injury by being led in this or that direction. Consequently all kinds of proposals were made, especially by auxiliary school teachers themselves, by which the folk-school teacher might be made competent to take up the work of the auxiliary school in such a way that he would without loss of time become a blessing to the school and a satisfaction to himself.

First, it was recommended that the new teacher be allowed to visit the classes of experienced auxiliary school teachers frequently. To begin with, the higher classes, then the intermediate, and finally the lower classes should be visited before he attempts to teach at all. This proposal deserves serious consideration. The visitor should be permitted to ask questions, to which instructive answers are to be given by the teacher in charge of the class. It is not less important that he should attend conferences of the auxiliary school instructors.

Secondly, candidates for positions in the auxiliary school are to be advised to acquaint themselves with the literature of the subject and to make themselves at home in all fields of knowledge and technical work which bear upon auxiliary school instruction. Above all, the following books are to be studied: Demoor, *Die anormalen Kinder und ihre erziehliche Behandlung in Haus und Schule*; Fuchs, *Schwachsinnige Kinder, ihre sittliche und intellektuelle Rettung*; Strümpell, *Die pädagogische Pathologie oder die Lehre von den Fehlern der Kinder*; Heller, *Grundriss der Heilpädagogik*. He should also make himself acquainted with the reports of the meetings of the German Auxiliary School Association and of the conferences regarding auxiliary schools and schools for idiots, as well as with the *Zeitschrift für die Behandlung Schwachsinniger und Epileptischer*, and further, with the "Kinderfehler." In consequence of this knowledge of the literature, not only will he become desirous of familiarizing himself with the history and organization of the auxiliary school system, but also of occupying himself with social and scientific pedagogical questions and individual departments of the work. Further, the auxiliary school teacher must know the sociological efforts being made in our time; also school hygiene, how to cure difficulties of speech, child and

folk psychology, as well as the broad field which the physician includes under the term "etiology of psychosis."

Thirdly, the auxiliary school teacher is recommended to increase his knowledge by attendance upon suitable series of lectures. These lectures have hitherto been given rarely. In 1899 was established at Zurich the first course for teachers in special schools. As is seen from the reports published in the "*Kinderfehler*," this laudable undertaking reckoned more upon the attendance of teachers from the medico-pedagogical establishments than from the auxiliary schools. In 1904 an attempt was made at Jena to adapt these courses specially to the needs of auxiliary school teachers. The pedagogical department of the vacation schools which have been organized for many years presented lectures regarding defects of character in childhood and youth, child psychology, the auxiliary school system, difficulties of speech in childhood, the physiology of the brain, and demonstrations by reference to meagerly endowed and defective children.

These lectures will maintain their significance as a kind of introductory preparation so long as a fourth demand is not met by the state, which is that auxiliary school teachers be trained in specially constituted seminaries.

We can not demand that the state establish a number of training schools whose graduates shall be competent auxiliary school teachers. Neither can we expect the normal school student to decide before he completes his training whether he will teach in a folk or auxiliary school. That would be possible if all teachers' seminaries had a special course in auxiliary school pedagogy. In my opinion the highest educational authorities would only have to take another step in the same direction in which they are already working, and (to quote from a Prussian resolution of 1901 regarding the training of teachers) give the seminary students sound pedagogical training regarding the development of the spiritual life of the child in its normal course and its most important pathological conditions. Overcrowded as the pedagogical curriculum is to-day with material, it would seem that this thoroughness of training in these regards, which is so much to be desired, must remain as an unrealized hope. Specialists can not and should not be reared in the schools for the training of folk school teachers. However, greater interest may be aroused in the various branches of curative pedagogy; and as in recent years pupils have been allowed to visit now and again institutions for the deaf and dumb, the blind, or idiots, he might now also be permitted to see the workings of an auxiliary school. Then he might be given a short introduction to the history, organization, and literature of the auxiliary school system. It would not be a bad idea if there should be a division for mentally deficient children in the practice school; the seminary student would be able to learn a great deal

there. Of course the work in this department would be hard and not very pleasant for a beginner. On account of this the wish can not be realized.

Therefore an effort should be made in another direction. Let the state establish, in a university town, a center for the auxiliary school teachers of a whole district. Let auxiliary school teachers, well versed in theory and practice, be called to positions there in a model auxiliary school. These teachers, together with medical men, jurists, and political economists from the university, should hold lectures each year for such seminary graduates as have been chosen at its recommendation by the official authorities. A final examination, which would be considered equal to the examination for teachers in the intermediate schools or institutions of the deaf and dumb, would qualify the candidate to accept a position in the auxiliary school. Later it can be decided whether an examination for school principal is essential. At present such an examination is considered unnecessary. A folk school rector is still always chosen as principal of an auxiliary school, who then has to direct the affairs of a folk school along with those of an auxiliary school. This conception of the auxiliary school principal hitherto is not entirely false. The folk school rector who performs the duties connected with the auxiliary school with zeal and love may be of great service to it. Yet the more the before mentioned desires regarding the preparation of auxiliary school teachers are fulfilled, the more must consideration be given to the auxiliary school having its own director. Of course he must be a teacher, not a physician, for even the medical questions, which are of the utmost importance, are to be considered from a pedagogical point of view. This will be seen again and again at teachers' meetings. At these conferences questions regarding organization, methods, care of the soul, and psychological problems, as well as discussions on literature, may compose the entire programme. In many cases the school physician must be present at such meetings. It will then be helpful to have model lessons, particularly when it is a question of change of method. Each year principals and teachers are to be given opportunity to attend meetings of associations and societies in the interests of the auxiliary school work.

In this section we have been speaking of male teachers and schoolmen; yet we do not wish to suggest that women should be excluded from auxiliary school work. Even though it would not be advisable to have only women to care for the education and instruction of mental defectives, as is often the case in other countries, yet we can not entirely dispense with the aid of women teachers. Strange to say, there are but few of these in German, and especially in Prussian auxiliary schools. For a long time their services in technical work

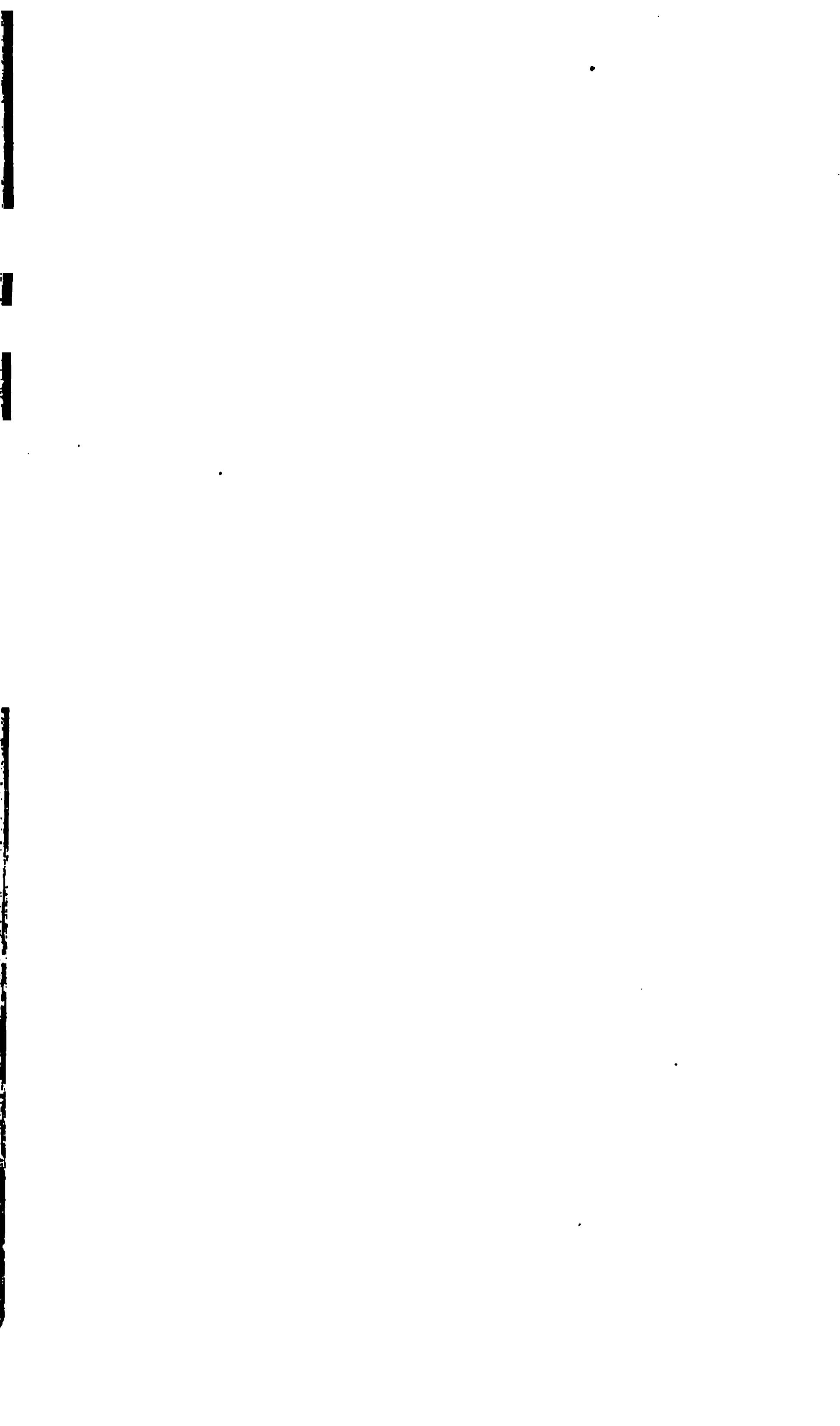
(hand work and gymnastics in girls' classes) have been desired; but so far as I know there are still very few auxiliary schools in the Empire which have any women teachers. And yet the auxiliary school could only gain by it if the motherly influence of women teachers were added to the fatherly influence of the men. To be sure, it will be harder for a woman to handle a mixed class than for a man, but deep interest in the welfare of the weakly endowed ones will probably be able to overcome even this.

## XVI.—THE PEDAGOGICAL SIGNIFICANCE OF THE AUXILIARY SCHOOL.

The auxiliary school question may truly be said to be many-sided; it interests the philanthropist as well as the political economist and the jurist; it also concerns pastors, doctors, and military officers. Naturally the educator is the one chiefly interested; but before all the practical expert, who never gives up on account of difficulties, finds his profit here.

A position in the auxiliary school is by no means a sinecure; but the expert in this school is lead by just the difficult duties of his office to make far-reaching theoretical researches. He discovers the various methods of psychological observation, and comes to find that a proper valuation of abnormal children may aid in the development of normal pupils. So by thoughtful study he may become a path-finder in the psycho-genetic field. His discoveries render service to the whole field of pedagogy in one way or another.

This splendid outlook is not impossible, because the pedagogy of the auxiliary school is not yet fully developed, and the auxiliary school teacher for the present is still able to work without being narrowly restricted by any laws. Also the whole field of pedagogy is yet to-day undergoing further organization. Just think of the complete change which has been made in the instruction of the first school year, in the consideration of coeducation, etc.! Therefore experiments can be made in the auxiliary school; it can serve as a pedagogical seminary in the broadest sense of the term for all schools. We do not need to repeat that the auxiliary school is not to be a place for pedagogical vivisection, and the auxiliary school pupil is not to be made a mere subject for such experimentation, but it can very well be made the university for all schools, and especially for the folk schools, by the efforts of the theoretically and practically qualified workers therein.



## APPENDIX.

[The following additional notes were prepared by Dr. L. R. Kletom, of the Bureau of Education.]

The idea of establishing separate classes in large schools, or special schools in the more populous cities, for weak-minded and other backward children, is not new in America. The first school of this kind was established by Superintendent A. J. Rickoff in Cleveland, Ohio, in 1873. He adopted the idea from the Germans, who had begun to agitate this question as early as 1860. Many American educational thinkers and school officials have, it is true, for years advocated semiannual promotions in school, so as to enable pupils who can not be promoted to pick up the lost stitches of their course in four or five months, instead of losing an entire year. Dr. W. T. Harris adopted this system in St. Louis as early as 1875, and enlarged upon the subject in conventions and in the press. In some other cities this arrangement and others designed for similar purposes have been successfully carried into effect, and many a child who has lost a grade through disease, truancy, or mental weakness has been saved from being put back an entire year. Still, this does not protect the majority of pupils from being retarded by the progress of the intellectual misfits.

The Germans seem to be imbued with the idea that saving a mentally weak child for a life of usefulness will prevent a heavy drain upon the town poor fund later on, hence that the outlay for special schools will result in a double saving—a saving for the individual as well as for the community.

The Mannheim system of grading the pupils of the public schools has been explained at some length on pages 43-47 of this work. As there stated, the schools of Mannheim are organized with three parallel courses, namely: A regular course, which is followed by over 90 per cent of the pupils; another to which pupils are transferred who for any reason need temporary aid; and a special course for weak-minded pupils. The diagram on page 122 illustrates this organization.

The school superintendent of Mannheim, Dr. A. Sickinger, argues that the organization of any city school system should be adapted to the natural capacities of the children. In other words, as children should be clothed according to their size and fed according to their appetites, they should be mentally nourished and exercised according to their mental capacities and strength. He points to the well known fact that many children at some point of their eight years' course fail to be promoted, while some fail repeatedly. Such children reach the age for leaving school before completing the regular prescribed course, and hence remain educational torsos or cripples, as they never get the chance of rounding out their education. They fail to acquire the habit of intensive and conscientious work, the most beneficial fruit of rational school training; they are left without confidence in their own powers, without willingness to work or joy in regular occupation.

Superintendent Sickinger suggests three ways for saving these elements of the city's school population: (1) Decreasing the amount of matter to be learned by all the pupils, for it is not the extent or breadth, but the depth and definiteness

of the knowledge gained which decide the value of school education. This method would, however, place all the schools on a lower plane of usefulness, for it would effectually check the aspirations of gifted children to rise above mediocrity. (2) Decreasing the number of pupils assigned to each teacher so

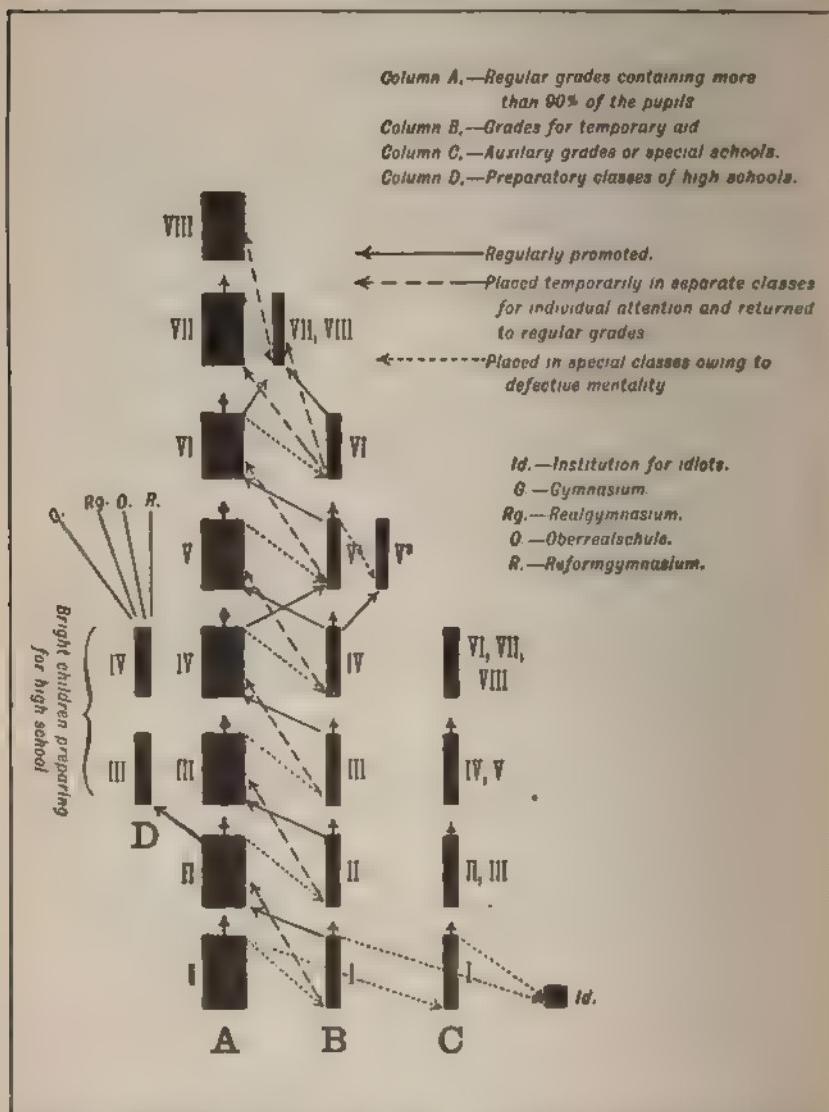


DIAGRAM illustrating the organization of the elementary school system of Mannheim, Germany. Reprinted, with slight alterations, from Julius Moses's *Sonderkindessensystem der Mannheimer Volksschule* (Mannheim, 1904).

as to facilitate more individual treatment. This would necessitate a much greater outlay in maintaining the schools. (3) Sifting out the pupils unable to keep pace with the normally endowed and giving them special courses, one course being adapted to physically and intellectually weak children, another to

those who by reason of absence or other unavoidable cause have fallen behind their classes, though they be intelligent enough to keep pace with the majority if given temporary aid. Doctor Sickinger's chief object in the latter case is to avoid the repetition of a whole year's studies, because that would occasion not only a great loss of time, but also a loss of self-respect, or else (if the attempt is made to go on) a dissipation of youthful strength in keeping pace, which strength might be better utilized after a few weeks of special attention.

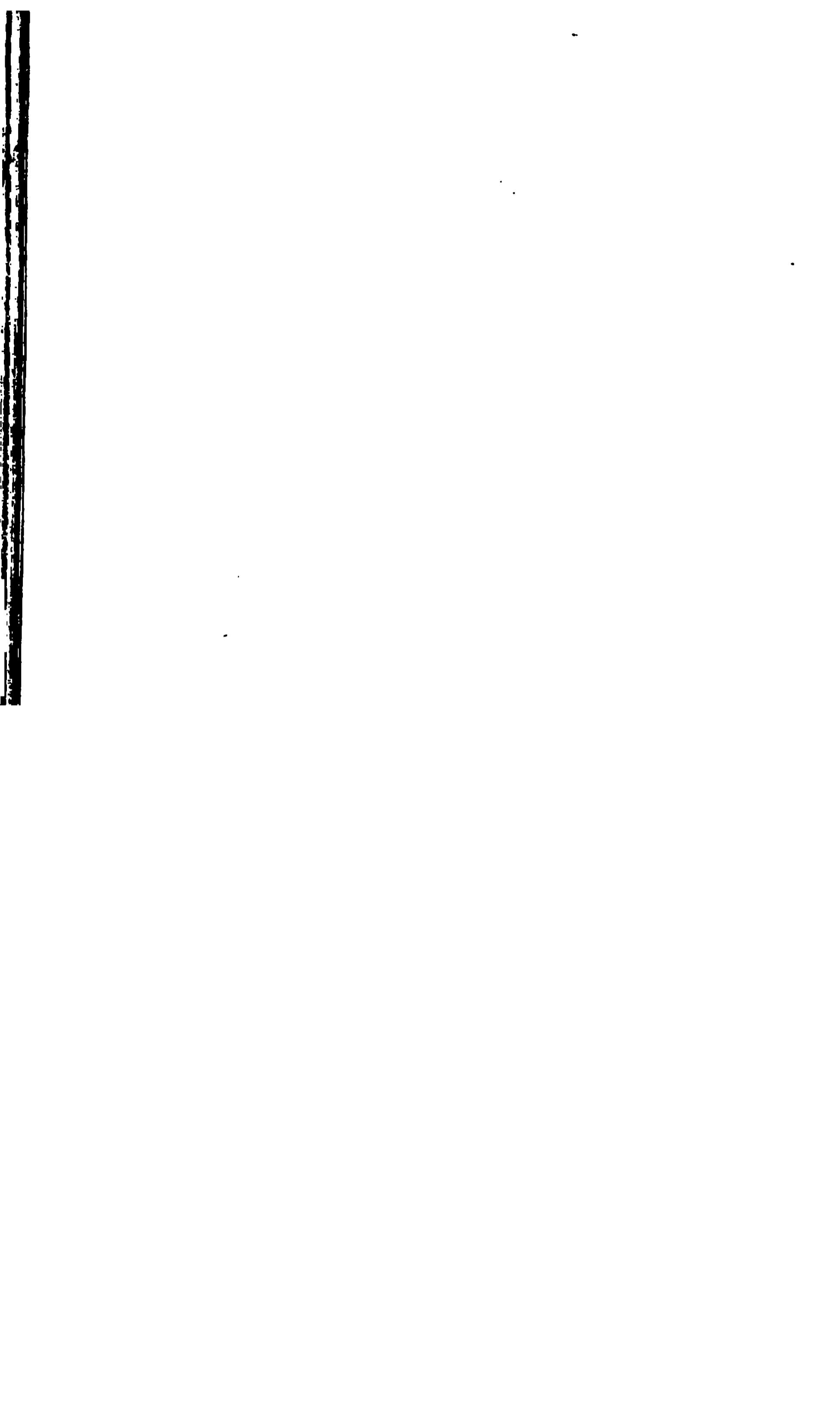
The accompanying diagram is so easily understood that it requires no further explanation. It will suffice here to call attention to the hygienic advantages accruing from this plan of school organization. The special classes (columns B and C) offer children with defective eyesight, hearing, etc., a treatment which few, if any, regular schools could possibly give: they also act as a sort of hospital for poorly fed, anemic, and nervous children, many of whom can not keep their attention fixed upon one subject for a long period of time, but who get tired after a few minutes of concentrated attention.

#### SUPPLEMENTARY STATISTICS.

The "Zentralblatt für die gesamte Unterrichtsverwaltung in Preussen," the official organ of the Prussian minister of public instruction, gives in its September-October number of 1907 comprehensive statistics (for 1907) of auxiliary schools in the different provinces of Prussia. These are summarized as follows:

#### *Auxiliary schools of Prussia.*

Schools -----	204
Pupils -----	12,734
Classes and teachers-----	690
Men teachers -----	544
Women teachers -----	146
Average number of pupils to a school-----	62.4
Average number of pupils to a teacher-----	18.5



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NOTE.—The brief bibliographies prefixed to the several chapters in the original work are here brought together in order to facilitate reference. The order of arrangement of the original has been retained, so that the numbers and subjects of the different divisions correspond with those of the chapters of the text.

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[The following abbreviations are used in this Index: a. s., auxiliary school; a. ss., auxiliary schools; assn., association.]

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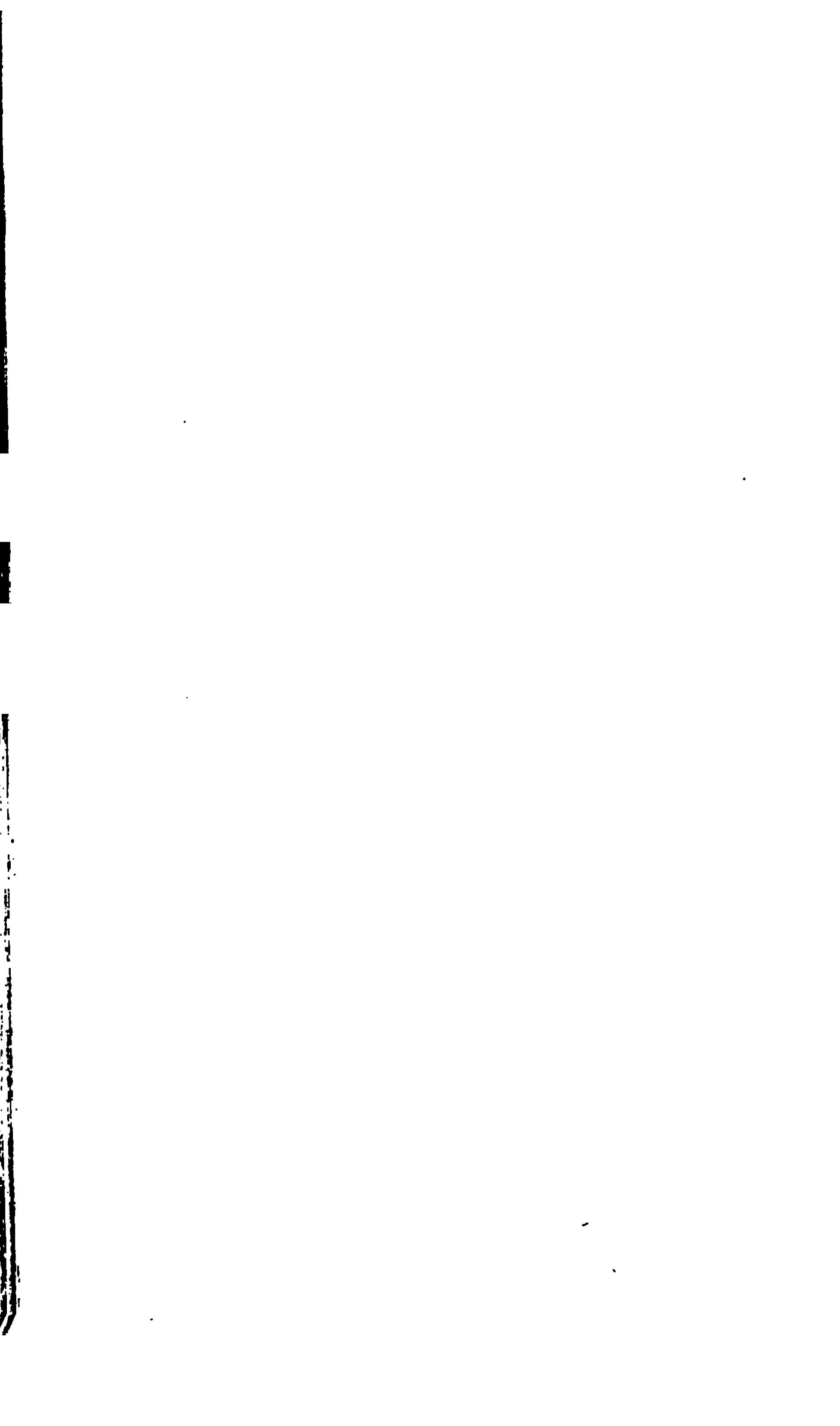
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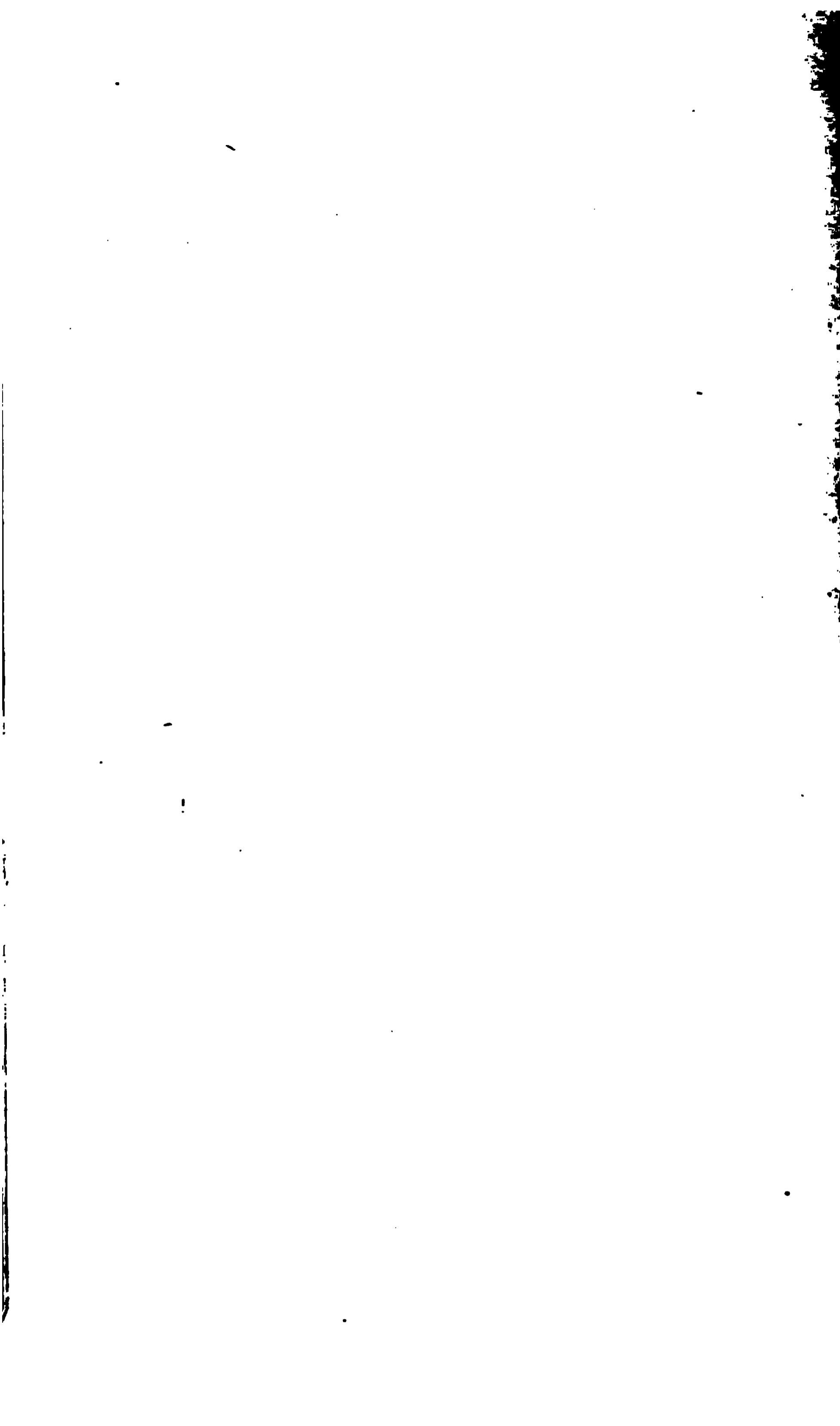
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DEPARTMENT OF THE INTERIOR : BUREAU OF EDUCATION

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# THE ELIMINATION OF PUPILS FROM SCHOOL

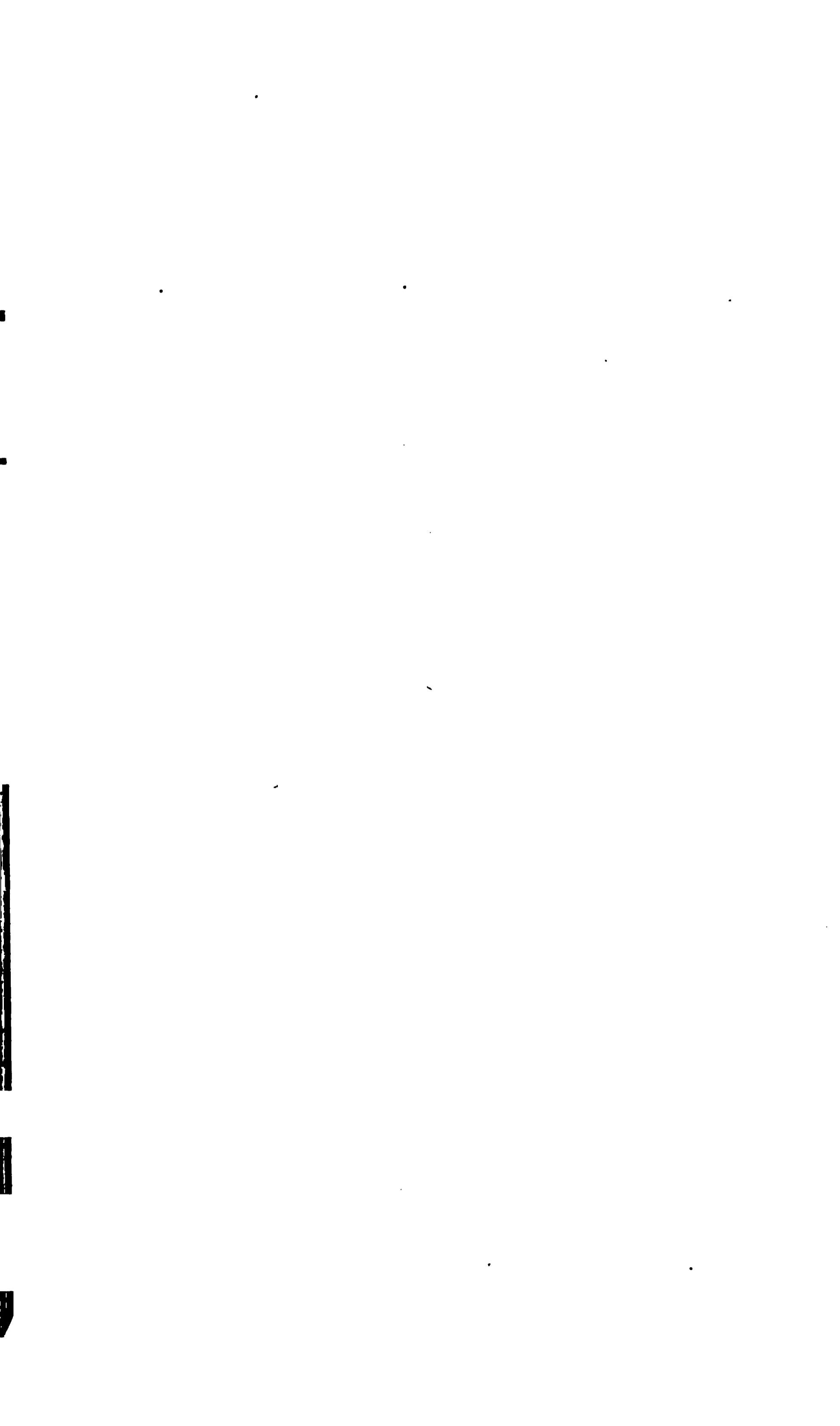
BY EDWARD L. THORNDIKE

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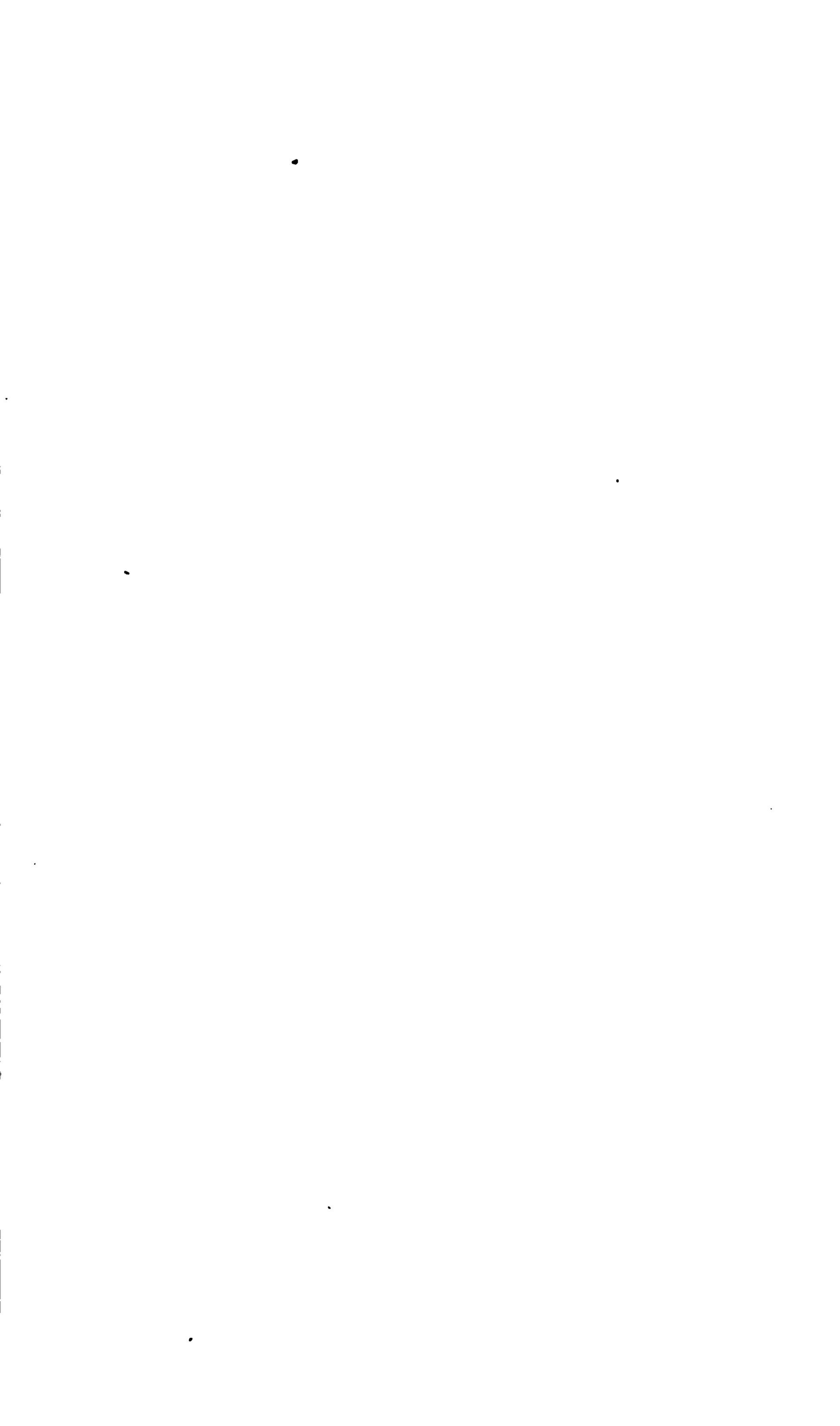
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## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,

*Washington, October 26, 1907.*

SIR: I have the honor to transmit herewith the manuscript of a monograph entitled "The Elimination of Pupils from School," by Prof. Edward L. Thorndike, of Columbia University, and to recommend its publication as the next issue of the Bulletin of the Bureau of Education.

The rapid dwindling of classes in the upper grades of our grammar and high schools has been often noted, and many suggestions as to the improvement of our system of education have been emphasized by reference to this tendency. It is clear that after all that has been done the attendance of pupils, particularly in our elementary schools, is still in an unsatisfactory condition, and this condition becomes more unsatisfactory in the later years of the school course. In order, however, that we may base any safe conclusions upon these facts of current observation, it is necessary that the facts should be more exactly determined and more carefully analyzed. Some important studies have been made in this field within the past ten or fifteen years. They have tended to show the danger of unqualified and sweeping statements with reference to the withdrawal of pupils from school, and to show also the difficulty of ascertaining the exact condition of our school attendance with the statistical methods and materials available.

Professor Thorndike's monograph, presented herewith, carries this inquiry much further than it has been carried in any previous study. Proceeding by well-defined methods of modern statistical investigation, it shows clearly the necessary limits of our exact knowledge of the subject, but points out also the conclusions which may be drawn from such records as are obtainable. The bearing of Professor Thorndike's computations and estimates upon the immediate problems of school administration are suggested briefly in his monograph. I may call especial attention here to the following:

While the attendance in the upper grades of our elementary schools does not make a good showing even yet in comparison with the attendance in the schools of some European countries, and the provision for

so-called continuation schools in this country falls behind that found in some portions of Europe, these unfavorable indications are in a measure offset by the notably large attendance in our American high schools.

While there is a marked falling off of attendance in the upper grades of the schools in all of the cities to which this inquiry extends, it is found that the variations between different cities are surprisingly great. The fact that some cities approach much more nearly than others to an ideal standard of school attendance offers ground of encouragement. It gives reason to hope that, bad as the present conditions appear in many parts of the country, they can be greatly improved by means which are already available.

Very respectfully,

ELMER ELLSWORTH BROWN,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.

## THE ELIMINATION OF PUPILS FROM SCHOOL.

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### § 1. *Introduction.*

What pupils stay in school, how long they stay, what grades they reach, and why they leave, are questions of obvious significance for any educational system. The facts concerning them decide in great measure the service performed by the system. A system in which laziness and stupidity eliminate pupils is better than one in which they are eliminated by poverty. A system which holds 60 out of 100 till the eighth grade is presumably better or more fortunate than one which holds only 20. If two systems keep pupils in school equally long so far as years go, and one of the two systems gets 15 out of 100 through the high school while the other gets only 5, the latter system is probably somewhere guilty of waste.

The facts really needed for an adequate study of these general questions are the educational histories of 500 to 1,000 children (chosen at random from the 6 to 8 year olds) in each of 20 or 30 communities, each of the individual histories to cover at least the years from 8 to 18. If these histories were studied in connection with the characteristics of each community's educational endeavor, and in connection also with the economic, social, and intellectual environment of the individuals concerned, we could know exactly the general tendency of elimination in this country, the variability of different communities in respect to it, the causes of these variations, and at least some of the ways to keep more of the children and more of the worthy children in school.

For four years the author has been gathering and studying such data as he could obtain from printed reports and the like concerning various aspects of the general question, in the hope of eventually making specific studies in some cities with data of the desirable sort just described, and so being able to interpret the facts already given in print. It has proved impracticable for him to obtain these educational life histories of individuals. It therefore seems best to report briefly the facts at hand, in the hope that others may be encouraged to secure and study the more important individual histories.

The facts at the basis of this report are:

- (1) Registration statistics by grade in elementary and high schools.
- (2) Registration statistics by age in elementary and high schools.

- (3) Registration statistics by grade and sex in high schools.
- (4) Registration statistics by age and sex in high schools.
- (5) Registration statistics by grade in colleges.

Such facts are instructive, provided one uses them with full cognizance of their meaning and likelihood of error. Otherwise they may be seriously misleading. For example, the registration for grades 5 to 8 in Springfield for 1903 was as follows:

Grade 5.....	1,072	Grade 7.....	799
Grade 6.....	986	Grade 8.....	633

This does not mean that of 1,072 pupils in the fifth grade 633 will remain on till the eighth; for it to mean that, there must be a stationary school population. The eighth grade in 1903 should be compared not with the lower grades of 1903, but with the fifth grade of 1900, the sixth grade of 1901, and the seventh grade of 1902. Doing this, we get (instead of 1,072, 986, 799, and 633) 904, 892, 768, and 633.

But these figures, though far nearer the truth, are by no means necessarily a true measure of the retention of the fifth grade pupils of 1900; for some of these 904 pupils of 1900 undoubtedly were held back two years in some grade and yet are staying on in school and will be in the eighth grade, but in 1904, conversely with some promoted rapidly. Also, some may have stayed out of school for a year or more and then reentered. Also, if 1,000 families, each with a child of about 13, moved to Springfield in 1902, the 633 of the 1903 eighth grade would not represent those remaining from the 904 of the 1900 fifth grade; in fact, conceivably, not one of them might be left in school, the 633 being entirely composed of the children of these new families.

In the second place, a true estimate of elimination requires not only public school statistics, but also measurements of the interchange between public and private schools. Luckily, this correction is in most American cities of little account.

My report for education below the colleges is based on data from public schools only. My estimates concern the school careers of children entering the public schools of cities of this class. Those who leave to enter private schools are probably balanced by those who enter later grades from the parochial and other private schools. The interchange between public and private schools may be, however, of varying influence in different cities, and unless we can estimate it accurately for each our comparison of individual cities will be to some extent in error.

In the third place, if we are to make statements concerning individual educational systems, such as individual cities, without risk of being unjust, we need figures from enough years to give a result precise enough to prevent rating any one city above any other when in the long run it would belong below it. Data that give a precise notion of

the general tendency of all urban communities together may give a very rough approximation for any single city.

For example, we find that, taking the sixth grade of 1903 and the seventh grade of 1904 in Springfield, the percentage of retention of the sixth in the seventh is 92.5. Taking the sixth grade of 1902 and the seventh grade of 1903 for Cambridge, the percentage of retention is 89.5. Fuller data reverse the positions of the two cities, however, for with four fifth to sixth grade successions for Springfield we get 85.9 86.1, 88.5, and 92.5, averaging 88.3, and with three such successions for Cambridge we get 89.9, 89.5, and 101.1, averaging 93.5.

Confronted by these and many other difficulties, one may choose between (1) studying elaborately each city's school statistics, vital statistics, and the like for the past decade until one gets a precise estimate of what has since happened to a thousand or so pupils who entered school in 1894-1896, or (2) going ahead with such registration statistics as one has, being careful to infer from them with due allowance for their proper meaning. The former choice is theoretically the one to make, but practically it necessitates a very great expense of time and money in the collection of back reports and the imposition upon school officers of many burdens in the way of information-giving. In fact, to be properly done, this work must be done, not for a twelve-year period past, but for the twelve-year period to come, and done by some permanent office, such as a State department or the United States Bureau of Education; for the back data required could not in some cases be got now, even with the utmost good will and labor of school and city officials. They have to be gathered at the time the facts exist and with the special aims of such a study in view.

The less satisfactory way, besides being by far the more practicable way, has the advantage of being harmless so long as we do not interpret or infer falsely. It is the way I am compelled to take. Moreover, if a large amount of time and money were to be spent, it could be put to greatest service in the study of individual pupils.

For the sake of the reader who is disappointed by this confession of my inability to give a straightforward account of how many pupils of those who entered, say, in 1894, dropped out grade by grade or year by year, and who fears that he will be perplexed by a mass of undigested statistics to come later, it may be said here at once that with all the intricacies and ambiguities of the facts it will be made abundantly clear that—

- (1) At least 25 out of 100 children of the white population of our country who enter school stay only long enough to learn to read simple English, write such words as they commonly use, and perform the four operations for integers without serious errors. A fifth of the children (white) entering city schools stay only to the fifth grade.

- (2) Of the children entering the public schools of our more favored cities over half probably never have a man teacher.
- (3) Less than 1 in 10 graduate from the high school.
- (4) Only about a third graduate from an elementary school of seven grades or more.
- (5) Only about half have any teaching of consequence concerning the history of their own country or any other or concerning the world's literature, science, or art.
- (6) In our city high schools, for 100 girls entering there are only 75 boys. During the high school course, moreover, the boys are eliminated more rapidly, so that in the last year there are 60 per cent more girls than boys.
- (7) Though Germany and France, and perhaps England, do as well as the United States in keeping every one in school until he learns the rudiments or until he reaches 13, the United States is far more successful in retaining a fair percentage for a much longer and more extensive schooling.
- (8) The failure of this country to provide education generally for the wage-earners is in part atoned for by the delay in requiring youth to go to work and their retention in school till the late teens.
- (9) There is an enormous variability amongst cities in the amount of elimination, such that if all cities of over 8,000 inhabitants did as well as worthy citizens, good fortune, support of education, and wise administration now enable, say, Worcester, Cambridge, Malden, or Springfield, to do, the number of children remaining to, say, the seventh grade could be increased 40 per cent, and the number remaining to the fourth year class of the high school could be increased over 100 per cent.
- (10) The superiority of one city over another in the retention of pupils is apparently caused far more by the nature of the population than by any peculiarities in the curricula or schemes of administration of the schools.
- (11) The high schools are being recognized by parents and pupils as simply the last four years of a general course, there being, so far as leaving school is concerned, no greater gap between the last elementary and the first high school grade than between the seventh and eighth elementary grades or the first and second high school grades.
- (12) One main cause of elimination is incapacity for and lack of interest in the sort of intellectual work demanded by present courses of study.

## PART I. ELIMINATION BY GRADES.

### § 2. *The Amount of Elimination.*

I estimate that the general tendency of American cities of 25,000 and over is, or was at about 1900, to keep in school out of 100 entering pupils <sup>a</sup> 90 till grade 4, 81 till grade 5, 68 till grade 6, 54 till grade 7, 40 till the last grammar grade (usually the eighth, but sometimes the ninth, and rarely the seventh), 27 till the first high school grade, 17 till the second, 12 till the third, and 8 till the fourth. Figure 1 shows graphically this general tendency. It will be remembered that the figures for public schools in the country as a whole are probably much lower than this.

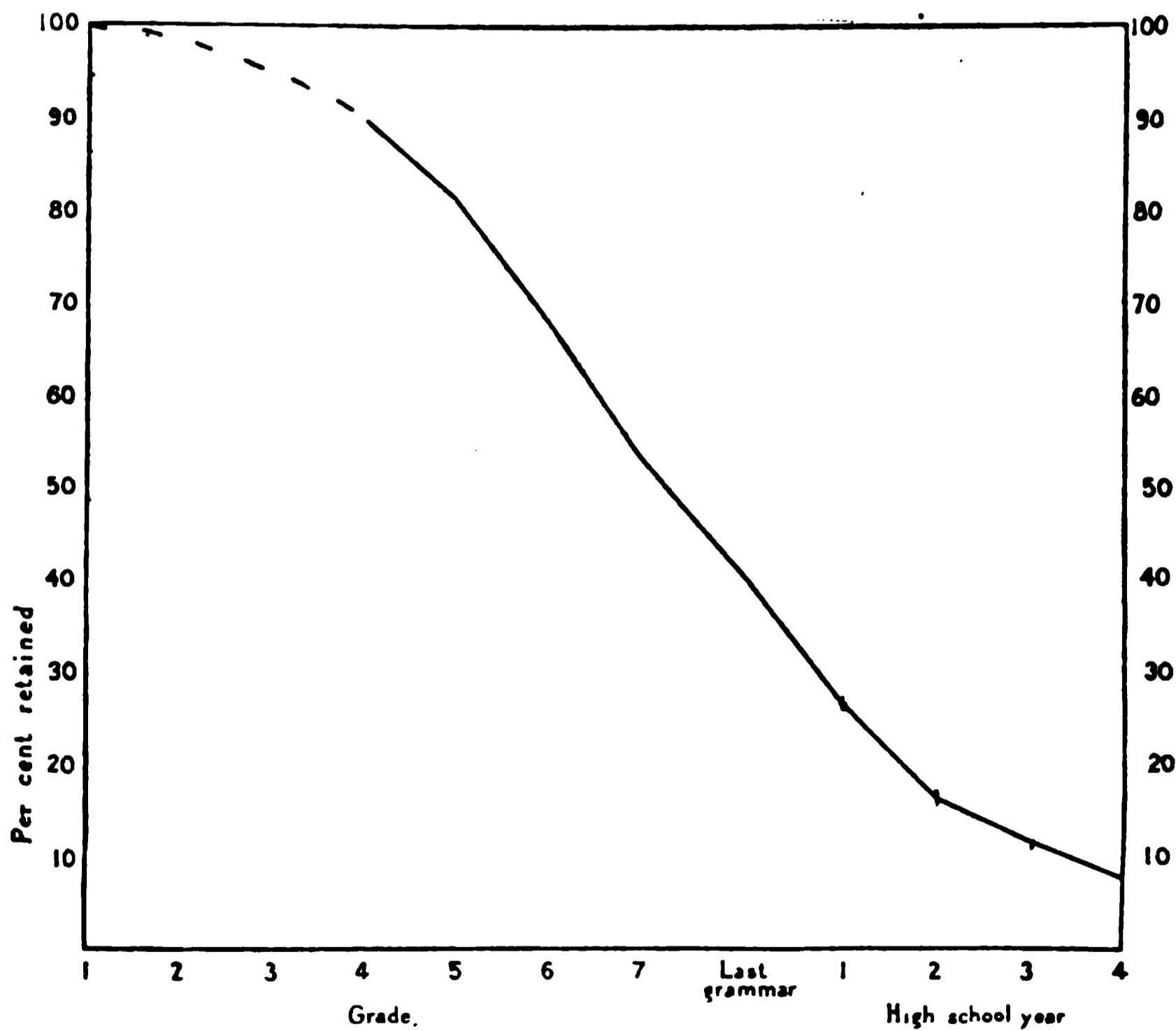


FIG. 1.

<sup>a</sup> Those eliminated by death are not considered in these figures. Allowance is made for such, the estimates being for entering pupils who live long enough to complete the course. Here and throughout the report, also, unless the contrary is specially stated, "children" or "pupils" includes white pupils only, in cities where the two races are taught in separate schools.

These figures really need no comment. I venture, however, to call attention to some common errors in educational thought and practice due to neglecting them. To provide free schooling through the high school for all children is not to educate all children. To compel pupils to attend till 14 is not to compel them to get a solid elementary education; not half of them do. The elementary school is not a preparatory school for the high school; only 1 in 4 of those entering the former enters the latter, and not 1 in 12 of those entering the former will graduate from the latter. The first years of the high school are not a preparation for its later years. The instruction in the first four elementary grades, especially in the third and fourth, designed for little children, is given to a great number of half-grown boys and girls 11 to 14 years old <sup>a</sup>, whose interests it nowise suits.

Our statistics of elimination also help to reveal the true explanation of the relative backwardness of the United States in public provision for technical and trade education. The fact is that the class who attend the Fortbildungsschule in Germany and the special classes in sciences, arts, and industries in England, are in our country not obliged or allowed to earn a living at so early an age, but are in regular attendance in public high schools. From 14 to 18 more of our boys and girls are in regular day schools than are in day, evening, and special classes together in England. We have neglected technical and trade education partly because we were slow to appreciate its value, but also because national prosperity allowed us to leave a large proportion of pupils in school altogether till 16 or 17, and the high value of intelligent, though untrained, labor in our country allowed us to give them all what we regarded as the best sort of education—the traditional academy course. It is significant that our appreciation of the value of technical, industrial, and trade education as a part of public school work was manifested first in courses absorbing all the pupils' time (i. e., in manual training and commercial high schools), rather than in continuation schools or special classes. If we fail to give the better quarter of boys and girls 14, 15, 16, and 17 years old a chance to study the technical and industrial arts outside of working hours, it is in large measure because they are studying something else all day in the higher grammar grades and public high schools.

It is not advisable to discuss the general tendency to elimination in great detail, for the reason that the varied cases of it furnished by particular cities offer more instructive information. Table 1 shows the

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<sup>a</sup> The evidence of this fact comes from comparing the age elimination to be given later with the grade elimination.

facts concerning 23 cities.<sup>a</sup> Figure 2 shows graphically the great differences that obtain among these cities.

In the case of each of these cities I have registration figures from enough years to warrant the conclusion that if we knew the facts for ten years the chances are 10 to 1 that my figure in the given case would not vary by 6 per cent of its amount. For these cities I have also been able to estimate the growth of population and the change in the tendency to keep children in school, with reasonable exactitude, so that in correcting the registration figures so as to infer from the number of children in the different grades the successive grade populations, I am confident that errors of over 5 per cent of the given per cent are very few. I am unable to measure exactly how reliable my corrections are, because the interchange between private and public schools, the quality of families moving in and moving out from the city, and the exact birth rates are not ascertainable. Also the number of children entering school is not given, but has to be inferred from the number in the first, second, and third grades. The data used in making the estimates are given in Parts IV and V, so that the student who doubts the substantial accuracy of my estimates can, for any or all cities, estimate for himself. It will, I think, be safe to trust that in nine cases out of ten the perfect and entire educational history of every child entering school in say 1894, 1895, and 1896 would give results that would not vary from my estimates by 8 per cent of their amount.

I judge therefore that inferences concerning the elimination in different grades or concerning the elimination in different cities are safe except when the difference in question is decidedly small. For instance, there is not one chance in millions that Baltimore gives its pupils as extensive an education, measured in years, as Worcester does, or that in general the number of pupils dropping out by the last grammar grade would be as low as 50 per cent.

To Table 1 and Figure 2, then, I refer the reader for the facts concerning the amount of elimination by grades in American cities. In Part IV additional facts are given.

<sup>a</sup> These 23 cities are not a random selection from American cities, though they are a random selection so far as the author's influence is concerned. He simply took from all the published reports at his disposal all those where the appropriate statistics were given for enough years close to 1900 to give a sufficiently precise measure for the tendency in the city at that period. He rejected no city for any other reason than the absence of the data, and chose no city for any other reason than that the data concerning it were available in the Teachers College Library.

The 23 cities are then a random selection of those that formally report registration by grades. That they represent such cities accurately is demonstrable not only a priori from the laws of probability, but also by a comparison of the results calculated from them with similar results calculated from a nearly complete list of such cities, but with data for a single year only.

Certain important cities, for which data were not available at the time when the main investigation was made, are made the subject of a special report in Section IV.

Concerning these cities I have nothing to offer as to the causes of elimination that is sufficiently in advance of the opinion of good local observers to warrant publication. Poverty is one cause, but I am unable to assign any exact measure of its amount of influence. Incapacity for and lack of interest in school studies is another. This can be to some extent measured by careful treatment of the facts of grade elimination as related to age. In Connecticut, for instance, a 14-year-old who has got to the ninth or tenth grade is over twice as likely to progress two grades farther as is a 14-year-old whose lack of capacity or interest, or both, have prevented his getting beyond the fifth grade. Or to make the comparison differently, of the sixth or seventh grade population in Connecticut, the 14-year-olds are over one and a third times as likely to progress two grades farther as are the 15 and 16 year olds. A child who does not get beyond the fourth grade by 14 has in Connecticut less than 1 chance in 30 of progressing to the eighth grade as against 20 out of 30 in the case of his brighter or more fortunate fellow who at the same age has reached the seventh grade. The large number entering the first high school grade and the small number remaining through that grade bear further witness to the influence of lack of capacity and interest. The individual scholarship records of those who leave school grade by grade give a still better demonstration.

### § 3. *The Variability Amongst Cities.*

Table 1 and Figure 2 show the great variability among cities, some giving their pupils fully two grades more of school than others. The table shows further that the time at which the large losses occur varies amongst cities, some losing many in the early grades but holding their own or even recouping, like Minneapolis, thenceforth; some, like Cleveland, holding a large majority of their pupils for a while and then losing them very rapidly. It shows the universal prevalence of the rule that pupils leave in considerable numbers from almost the beginning of the elementary school course. It shows that in very few cities is there any specially large drop between the last grade of the elementary and the first grade of the high school.

This variability among cities is not due to chance, but to differences in the efficiency of the school systems or in the nature and circumstances of the cities' populations. There is a somewhat close relation between ability to keep pupils in the schools and other features of a school system which would be regarded as marks of efficiency, such as the cost per pupil or the percentage of expenditures devoted to teachers' salaries. And there can be no doubt that wisdom in the management of a city's schools improves its status with respect to the retention of pupils. In the opinion of the author, however, the charac-

ter of the cities' populations is far more important than the character of their educational administrations as a cause of the variability of the elimination.

TABLE 1.—*Estimated percentage of pupils entering school who continue to the fourth, fifth, etc., grades in each of 23 cities.*

	Grammar school grade.						High school year.			
	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.
Baltimore.....	71.0	53.0	32.0	24.0	14.4	.....	8.2	5.0	3.0	2.3
Boston.....	85.0	80.5	76.3	65.8	52.2	47.0	31.8	15.7	12.5	6.3
Cambridge.....	90.3	82.0	62.9	57.8	55.7	41.9	29.4	21.0	15.8	13.9
Chicago.....	86.3	85.2	62.3	49.2	35.0	.....	14.0	9.8	6.6	5.5
Cleveland.....	97.2	79.6	41.9	45.3	33.1	.....	19.9	12.6	10.0	7.4
Denver.....	96.0	86.0	78.0	57.0	44.0	.....	.....	.....	.....	.....
Jersey City.....	75.9	65.5	50.6	35.6	26.4	.....	9.2	5.0	2.9	2.4
Kansas City, Mo.....	96.5	75.3	62.4	49.4	.....	.....	40.0	25.9	17.8	10.5
Los Angeles.....	96.4	95.0	80.0	61.5	46.1	.....	39.0	21.6	11.7	6.2
Malden.....	96.7	85.4	79.8	65.9	52.4	54.0	42.8	28.9	18.5	14.9
Minneapolis.....	85.7	69.7	57.1	45.7	32.0	.....	24.0	16.0	12.6	10.3
Newport.....	91.7	75.0	71.4	58.1	53.0	44.9	36.7	23.5	12.0	8.2
Newark.....	78.0	58.3	45.8	33.3	25.0	.....	17.9	8.3	5.6	3.8
New Haven.....	85.0	76.0	68.0	57.0	35.0	.....	24.0	17.0	14.0	9.1
New York.....	90.0	77.0	58.0	43.0	33.7	.....	.....	.....	.....	.....
Paterson.....	86.4	71.8	52.4	32.0	19.4	.....	10.9	6.8	5.1	3.7
St. Louis (white).....	94.0	83.0	35.0	27.0	21.0	.....	14.1	4.2	4.1	3.2
Springfield.....	99.0	82.4	78.0	66.2	53.4	38.5	30.0	24.6	18.2	12.8
Trenton.....	86.6	73.2	57.3	48.0	30.6	.....	22.0	15.2	14.2	11.6
Washington (white).....	93.4	86.9	70.6	57.5	52.1	.....	.....	.....	.....	.....
Waterbury.....	84.0	81.0	64.0	54.0	43.0	.....	32.0	26.0	14.0	8.0
Wilmington.....	90.6	81.1	73.8	51.6	39.0	.....	33.7	11.6	8.4	.....
Worcester.....	99.0	94.0	94.0	72.0	72.0	58.0	43.0	34.5	28.3	26.4
Medians.....	90.0	80.5	63.0	51.5	437.0	.....	27.0	16.0	12.5	8.0
Medians estimated in view of this and all other available in- formation.....	90.0	81.0	68.0	54.0	b 40.0	.....	27.0	17.0	12.0	8.0

\* Median of last grammar grades (7, 8, or 9) 28.5.

b Last grammar.

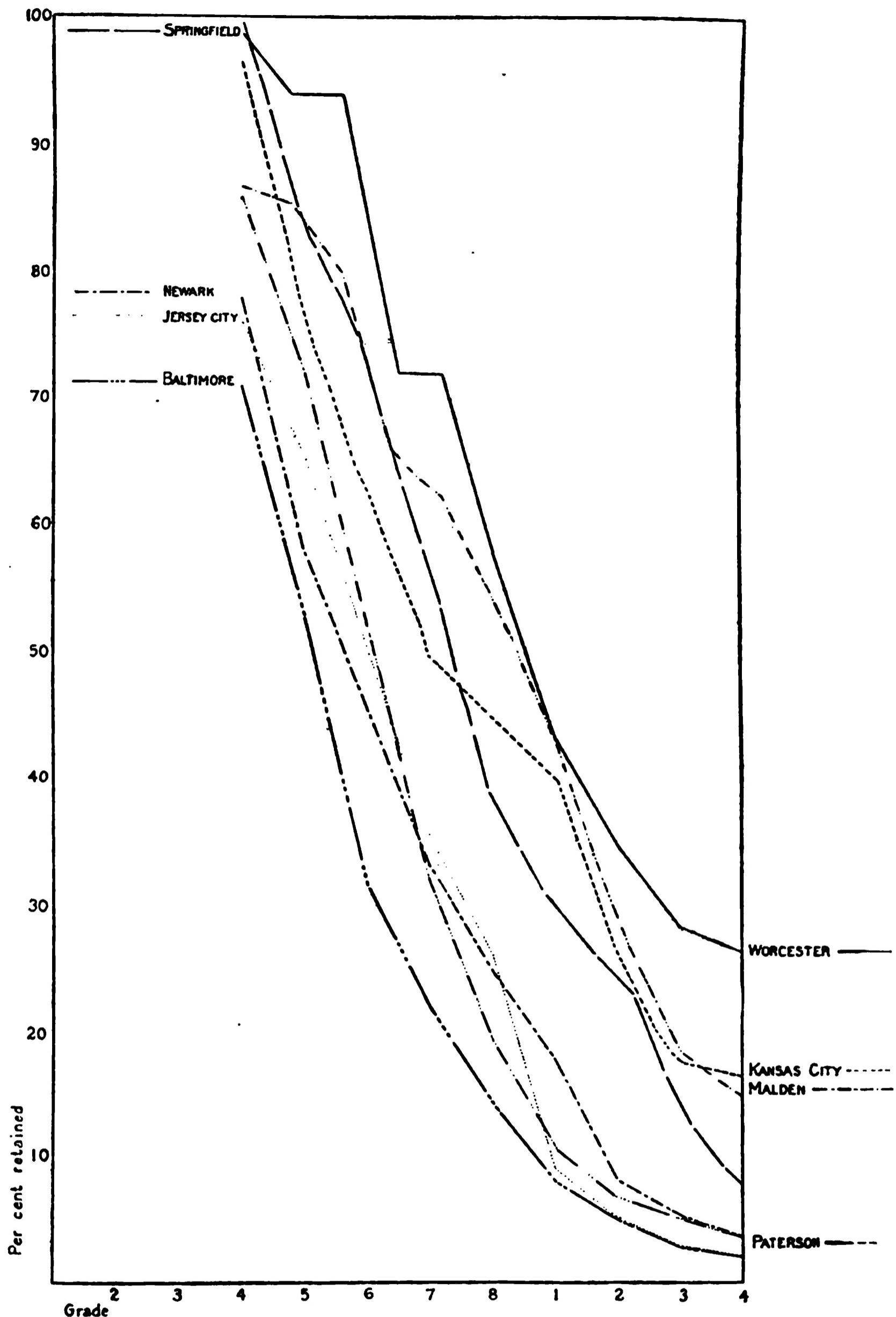


FIG. 2.

*§ 4. The Course of Elimination.*

To fully realize the course of elimination—that is, the relative amounts of elimination grade by grade—one needs to look at the facts from three points of view. We may ask, first, “Of 100 pupils entering school, how many drop out at each grade?” Second, “Of 100 pupils

in any grade, how many are lost before the next grade?" Third, "Considering the force producing elimination as increasing grade by grade by the addition of new causes and the retention of all the old, how much increase in this eliminating force is there grade by grade?" In the third case we regard the 100 pupils entering school as each to be eliminated from school as soon as the forces that cause elimination get strong enough to overcome the resistance each case offers.

In examining any one of the sets of figures given in the answers to these questions the reader must not forget that the step from the seventh to the last grammar grade is credited with the elimination of two grades in a number of the cities, and that if only cities with an eighth-grade system had been used the drop from the seventh to the last grammar grade would be a little less. I give the figures per hundred.

The answer to the first question is as follows (see also Fig. 3):

<i>Per cent of those entering school eliminated</i>	<i>Per cent.</i>
From fourth grade to fifth. . . . .	9
From fifth grade to sixth. . . . .	13
From sixth grade to seventh. . . . .	14
From seventh to last grammar grade. . . . .	14
From last grammar grade to first high school year. . . . .	13
From first high school year to second. . . . .	10
From second high school year to third. . . . .	5
From third high school year to fourth. . . . .	4

According to it the drop is greatest from the sixth to the seventh grade, and much the smallest from the second to the third and from the third to the fourth high school. But obviously, even if from the third to the fourth high school grade every pupil in the third were eliminated even if, that is, elimination were infinitely strong there—the drop would by this first method of figuring be only 12. The gross numbers dropped are then in a certain sense inadequate.

The answer to the second question is as follows (see also Fig. 4):

<i>Per cent of those in a given grade not continuing to next grade</i>	<i>Per cent.</i>
In fourth grade not continuing to fifth. . . . .	10
In fifth grade not continuing to sixth. . . . .	16
In sixth grade not continuing to seventh. . . . .	20 6
In seventh grade not continuing to last grammar grade. . . . .	26
In last grammar grade not continuing to high school. . . . .	32 5
In first high school year not continuing to second. . . . .	37
In second high school year not continuing to third. . . . .	29 4
In third high school year not continuing to fourth. . . . .	33 3

According to it the strength of elimination is greatest from the first to the second high school grade.

The two answers are both true and when taken together will not mislead an intelligent reader. I should perhaps apologize for proceeding to describe the results of looking at the data from the third point of view, which is a new one and may perplex the nonstatistical reader. Such a one may skip the next few paragraphs (to top of p. 21).

The justification for the third point of view is that we have no right to subdivide the eliminating force sectionally into pieces or amounts corresponding each to a one-grade step. The amount of force eliminating the pupils, say, in the second high school year, is to a large extent the sum of all the forces that act in the fourth, fifth, sixth, seventh, etc., grades, plus a new amount, the addition of which so strengthens the eliminating force that pupils not driven out of school by the amount of force operating in the first high school grade are driven out now.

It is true, however, that it is not quite accurate to regard the eliminating force as thus always retaining all the strength with which it operated in the lower grades and adding new forces in the case of the higher grades. To some extent the higher grade loses from the old forces. For example, the temporary financial difficulties of certain families exert an eliminating force in, say, the fifth grade, and ten boys thereby leave school. These difficulties later disappear, so that had the boys not left in the fifth they might have withstood all the eliminating force of the eighth grade. If the almost exclusive employment of women teachers is a part of the eliminating force in the elementary school, the high school would, in so far as it had men teachers, have less eliminating force to contend with. It is also the case that the entire state of affairs is otherwise arbitrarily simplified in our simple mechanical hypothesis of force overcoming resistance. Still, there is enough truth in the hypothesis to justify us in seeing how, according to it, we should regard the course of elimination.

The first step is to find out how the 1,000 pupils entering school differ with respect to ease of being eliminated or, thinking in the opposite direction, in resistance to eliminating forces. But we can not find this out exactly without elaborate researches involving greater labor than the present one.

We have reason to believe, however, that, starting with the amount of the eliminating forces which will just suffice to cause the withdrawal of a very small percentage of pupils, say, one in a thousand, and adding thereto successive equal increments of eliminating force, the number of pupils eliminated by each such successive equal step of increase will be at first small, then larger, then larger still, up to a certain point, then smaller, then smaller still, then still smaller, on to a point where the combination of forces causing withdrawal is so strong that the pupil least inclined by nature to leave school does withdraw. We can, that is, frame a reasonably probable hypothesis

concerning the relation between the amount of eliminating force and the proportion (that is, the relative frequency) of pupils who will be eliminated thereby. A quantitative statement of such an hypothesis concerning the relation between the force of elimination and the number eliminated may be given in a graphic or numerical distribution of pupils entering school with respect to ease of being eliminated.

The hypothesis I suggest is that the distribution of resistance to elimination in children entering school is of the form shown in Fig. 6.<sup>a</sup> The hypothesis is, then, that if we scale the amount of the eliminating force on a horizontal line, letting  $F_l$  equal the force which will just eliminate the one pupil out of a thousand entering school who is easiest to eliminate, and  $F_m$  equal the force which will eliminate the pupil who is hardest to eliminate, the proportion of pupils who will be eliminated by any degree of eliminating force,  $X$ , between  $F_l$  and  $F_m$ , will be represented by the area of Fig. 6 which lies to the left of the perpendicular erected at the point on the horizontal line which corresponds to the amount of  $X$ . For instance, if we call the increase in force from  $F_l$  to  $F_m$   $C$ , a force of  $F_l + \frac{1}{2} C$  will eliminate about 82 per cent of the pupils who enter school.

Our problem is, now, to make the reverse calculation, and from the fact that by the fifth grade 19 per cent have been eliminated, to infer the amount of force operative by the fifth grade, and so on for other grades. After this is done the differences between these amounts will give us the increases in eliminating force grade by grade, on the hypothesis stated above.

As a result of such a calculation, we have the following increases in the eliminating force grade by grade given in terms of hundredths of  $F_m - F_l$ . (See also Fig. 5.)

<i>Increase in eliminating force.</i>	$\frac{F_m - F_l}{100}$
Increase from fourth grade to fifth.. . . . .	5
Increase from fifth grade to sixth. . . . .	8
Increase from sixth grade to seventh. . . . .	6
Increase from seventh grade to last grammar grade	8
Increase from last grammar grade to high school. . . . .	8
Increase from first high school year to second. . . . .	7
Increase from second high school year to third. . . . .	5
Increase from third high school year to fourth. . . . .	5

<sup>a</sup> The reader will understand that the shape of this curve is not demonstrated by any facts presented in the text, but is itself a representation of the hypothesis to be assumed.

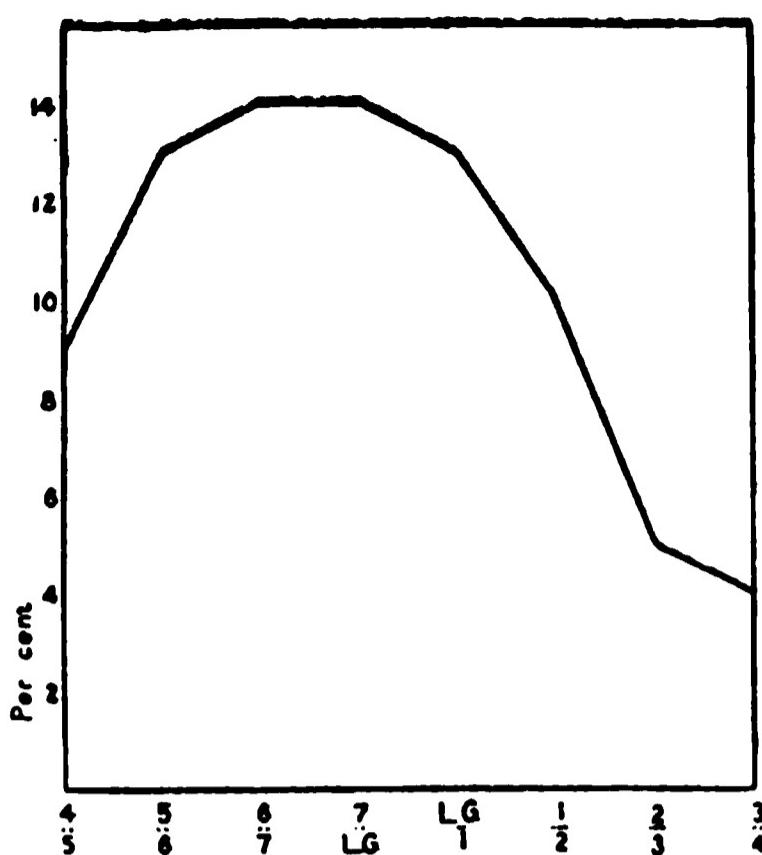


Fig. 3.

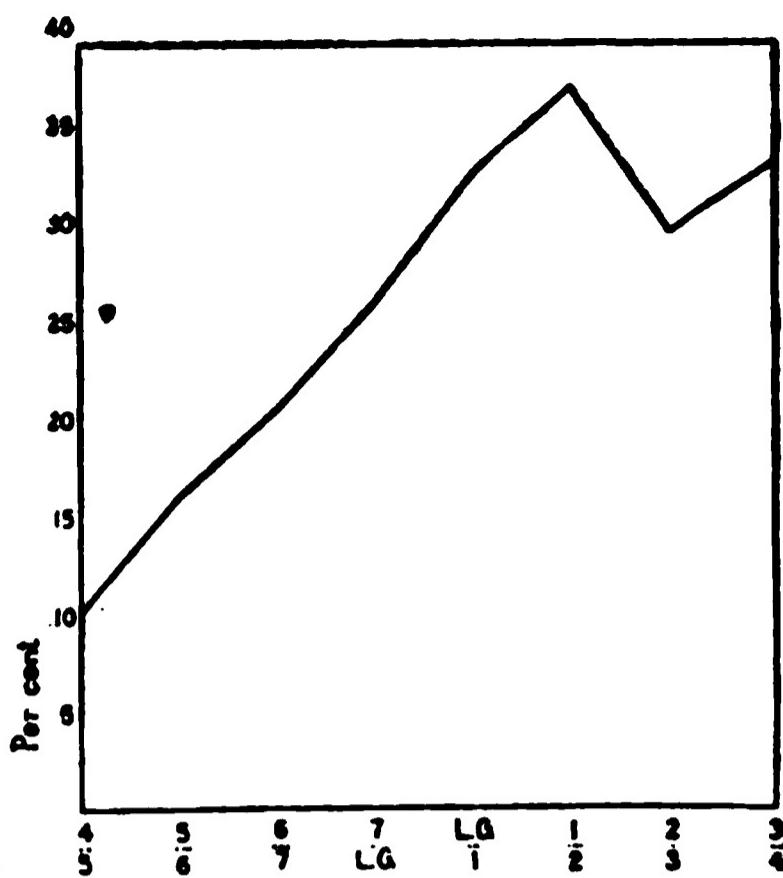


Fig. 4.

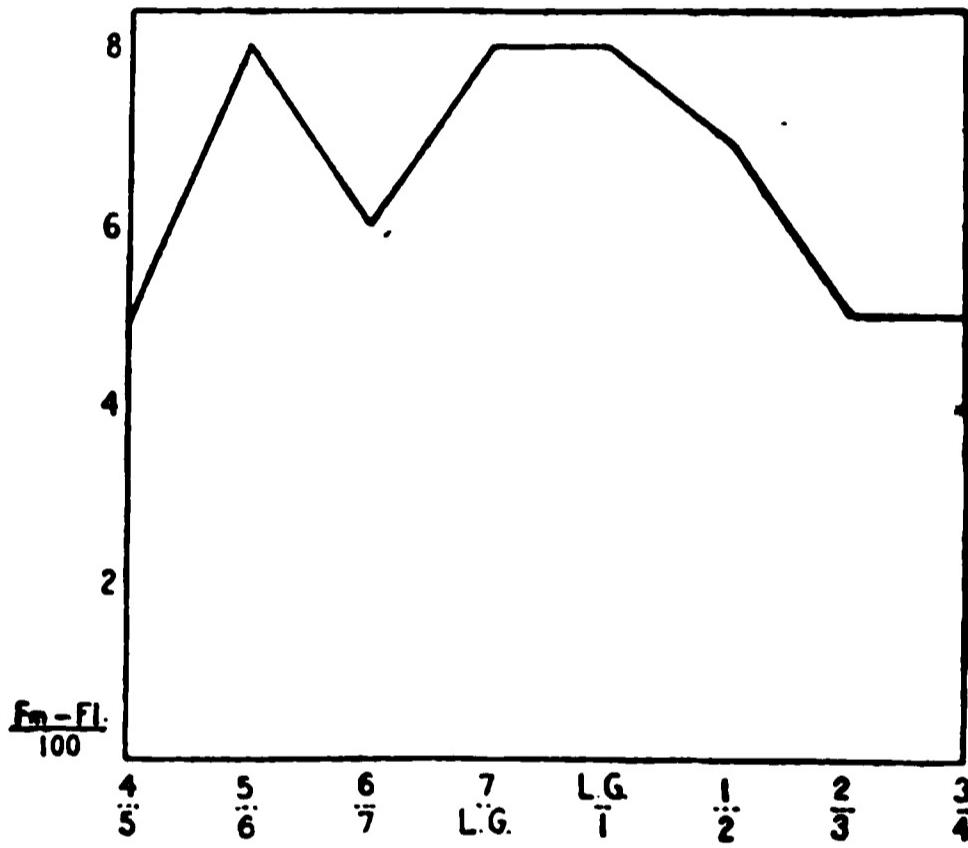


Fig. 5.

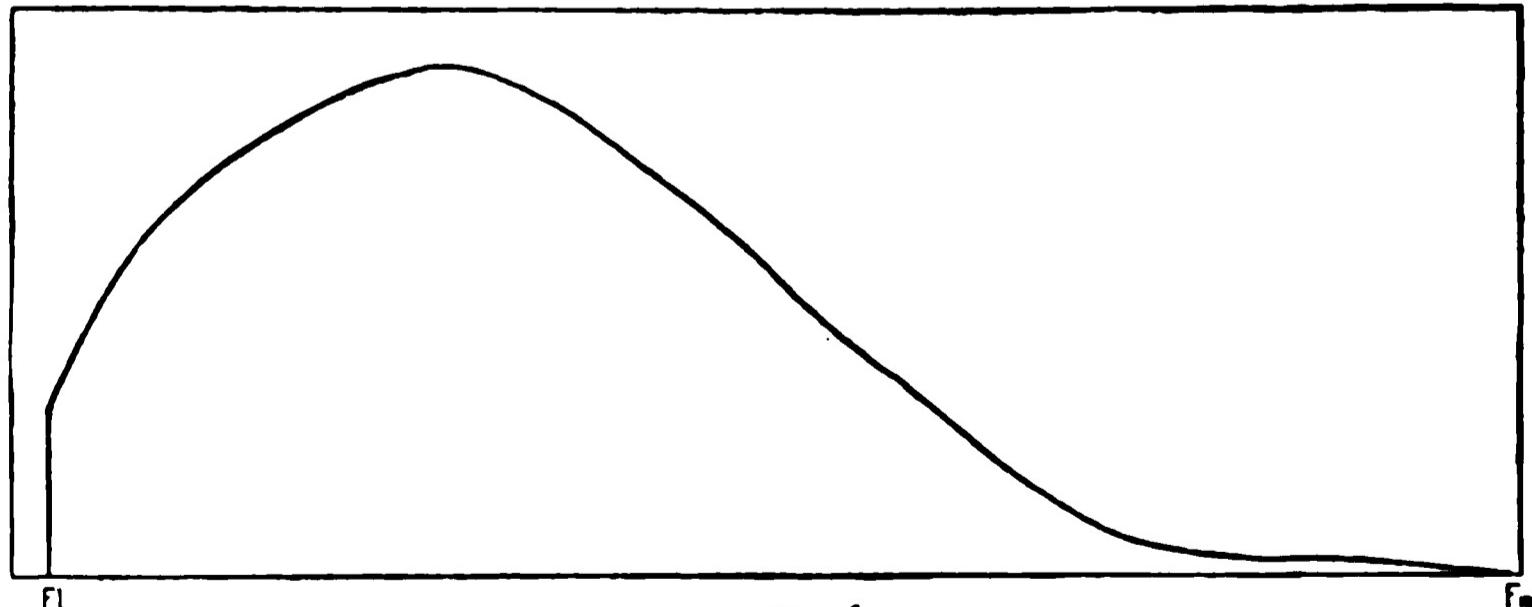


Fig. 6.

FIG. 3. --The course of elimination by the per cent of those entering school at the beginning that is eliminated in each grade.

FIG. 4. --The course of elimination by the per cent of those in any given grade that is eliminated by the next grade.

FIG. 5. --The course of elimination by the increase in the eliminating force grade by grade (certain hypotheses being made about the nature of the eliminating force).

FIG. 6. --The form of distribution of pupils entering school with respect to resistance to eliminating forces. The height of the curved line above any point of the base line represents the relative frequency of those who require, in order to be eliminated, the amount of eliminating force represented by  $Fl +$  that point's distance to the right of  $Fl$ .

The general course of the elimination is worthy of comment from several points of view. First of all, it is in somewhat sharp contrast with the same fact in England and Germany, and probably also in France. In England and Germany there is no greater elimination during the grades corresponding roughly to our grades 4 to 7, but then there is a very sudden and large drop, further continuance in day school being largely a result of one single cause—social position. In our 23 cities, on the contrary, the progress from an elementary to a higher school is demonstrably easy and customary, two-thirds of the pupils in the last grammar grade continuing to the high school. Such a state of affairs, true also of New York City, could hardly be found in a single large European city. Besides the obvious gain in the increased amount of education given, the American system has the advantage of selecting the recipients of higher education from a far greater number.

In the second place, as has just been indicated, there is no special gap between the elementary school and the high school. Graduation from the former is not a specially important educational goal. The drop between the last grammar and the first high school grade is not notably greater than either the drop a grade earlier or the drop a grade later. The high school is treated as a sequel of the elementary school to the same degree that the last grades of the elementary school are treated as a sequel to the early grades.

The third matter of importance is that the high school, which attracts so many, holds so few. Something in the mental or social and economic status of the pupil who enters the high school, or in the nature of the particular kinds of education given in high schools, is at fault. The fact that the elimination is so great in the first year of the high school gives evidence that a large share of the fault lies with the kind of education given in the high schools. One can hardly suppose that very many of the parents who send children on to the high school do so with no expectation of keeping them there over a year, or that a large number of the children who complete the elementary school course and make a trial of the high school are so stupid or uninterested in being educated that they had better be got rid of in the first year.

The last general feature of the course of elimination is its comparative steadiness. It is a common opinion that when a legal-age law is enacted with a 14-year requirement, the result is that a large proportion of those entering school will remain through the next to the last or the last grammar grade. It is also a common opinion that a sharp line divides those who thus remain as long as they are compelled to from those who stay on till they are through the high school or take some suitable opportunity for work or further study. How false both of these opinions are the facts show. Compare *a*, Figure 7,

which would represent the amount of elimination if such opinions were true, with the reality, *b*. The dropping due to passing the legal limit does not in fact make any very clear showing in the figure, first of all because the law is more or less evaded in the case of children much below the limit, and is evaded rather freely by children within a few months of the limit; second, because children who are close to graduation are often left in school till they graduate in spite of the need of their economic assistance; and, third, and most important, because these 13-year-olds are found in large numbers in grade 6, and even 5, and it is precisely these dull or backward or uninterested or unfortunate children who are old enough to work, have no prospect of graduating, and are made to learn childish lessons, who drop out from school. So the legal-age elimination is well spread over the grades. Moreover, those who stay on past 14 are of a wide range of ability, interest, and wealth. There exists every gradation from the pupil sure to leave school as soon as the law allows to the pupil who is almost as sure to finish the high school as he is to live at all.

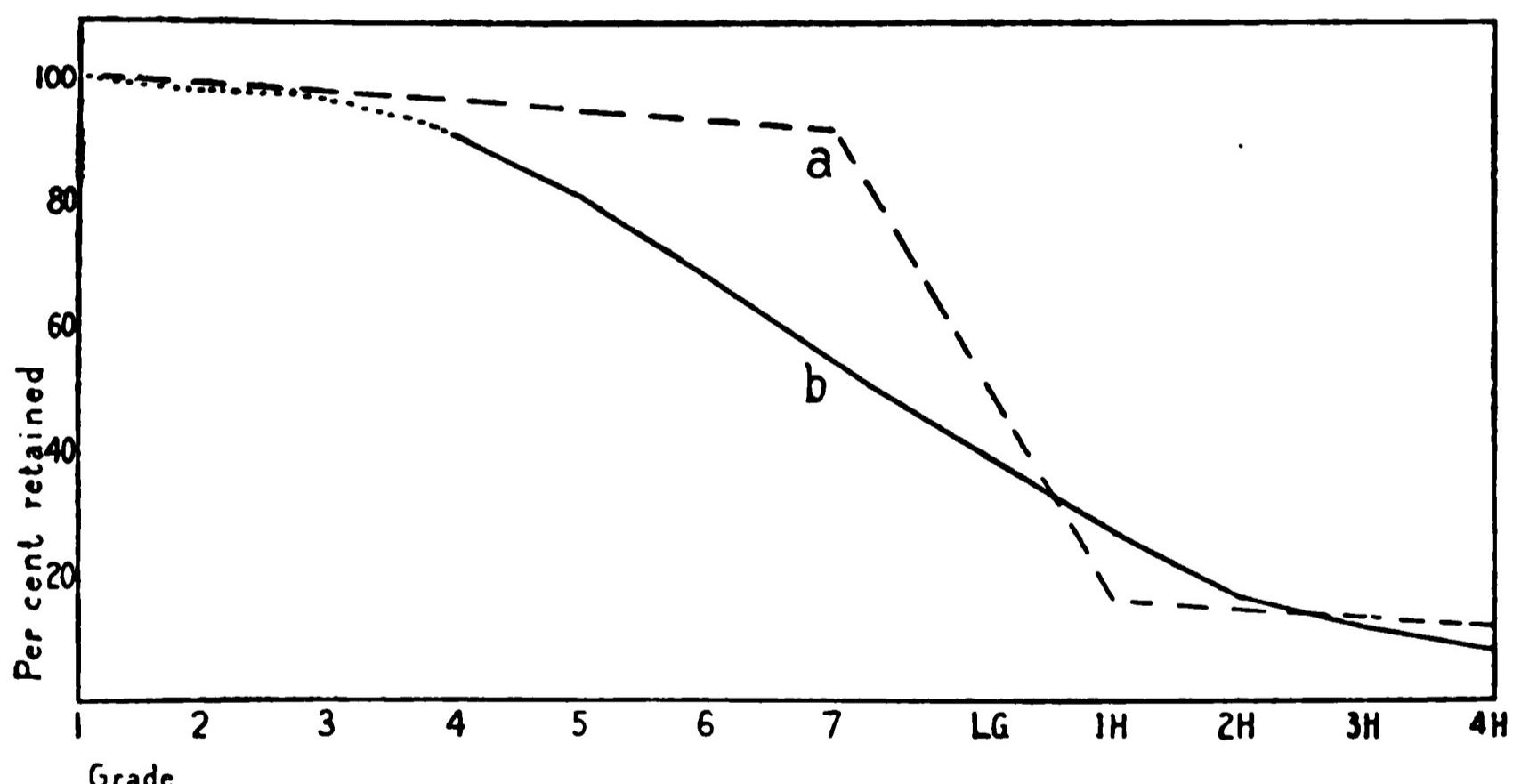


FIG. 7.

This gradualness of the elimination is a symptom that equality of educational opportunity is by no means a pretense, and that the differences in expectation of education of children born to a bishop, a storekeeper, a carpenter, and an unskilled laborer are minimized to a far greater extent than in any of the large European nations.<sup>a</sup>

<sup>a</sup> The definite figures showing these differences are given by Dr. A. J. Jones in The Continuation School in the United States (No. 1 of Bulletin for 1907, Bureau of Education).

## PART II. ELIMINATION BY AGES.

### § 5. *The Amount of Elimination.*

The amount and course of elimination by age and the variability of cities with respect to it are less important than the same facts concerning elimination by grade. So I shall simply give the general facts with very brief discussions. I have attempted to make the necessary allowances so as to present not mere school populations by age, but an estimate of the actual elimination year by year from the 8-year-olds who were in the schools of cities of 25,000 or over, say, in 1895. In Part V will be found the original data and an account of the process of inferring from them the actual elimination.

My study concerns 8-year-olds (1) of large cities, (2) in the public schools, and (3) in the case of cities where separate schools for the colored race are maintained, of the white children only. I also do not count elimination by death. Such being the conditions, I estimate that of one hundred 8-year-olds living long enough, the number retained till any given age is as follows:

*Percentage of 8-year-olds retained.*

Per-	Per-
centage.	centage.
10 years old.....	100
11 years old.....	98
12 years old.....	97
13 years old.....	88
14 years old.....	70
15 years old.....	47
16 years old.....	30
17 years old.....	16. 5
18 years old.....	8. 6

Figure 8 shows the amount of elimination with respect to age at a glance.

These figures complete the proof of the provision in regular day schools for boys and girls who, in England and Germany, have to be at work with only scanty schooling in special classes. They show the readiness of a large proportion, almost a majority, of parents to neglect the opportunity to withdraw their children at the legal age limit. They also show the very considerable number of the violations of the law, a number which would probably be somewhat increased if false reports of age were not present. The legal age limit has evidently a less effect than we have been in the habit of supposing. Its service is now to prevent the folly of a minority of families rather than to set a standard for the community as a whole.

The importance of the fact that pupils stay so long and yet progress only to so low grades has been recognized by wise administrative officers. It means, of course, that many pupils are held back unduly, or that the work which they are given to do but fail to do is unsuited to them. Rapid-promotion systems, special classes, careful regulation of promotion, the substitution of industrial and trade schools or courses for the regular school, and the like will be used by efficient school officers to make retention to a late age mean also retention to a valuable education.

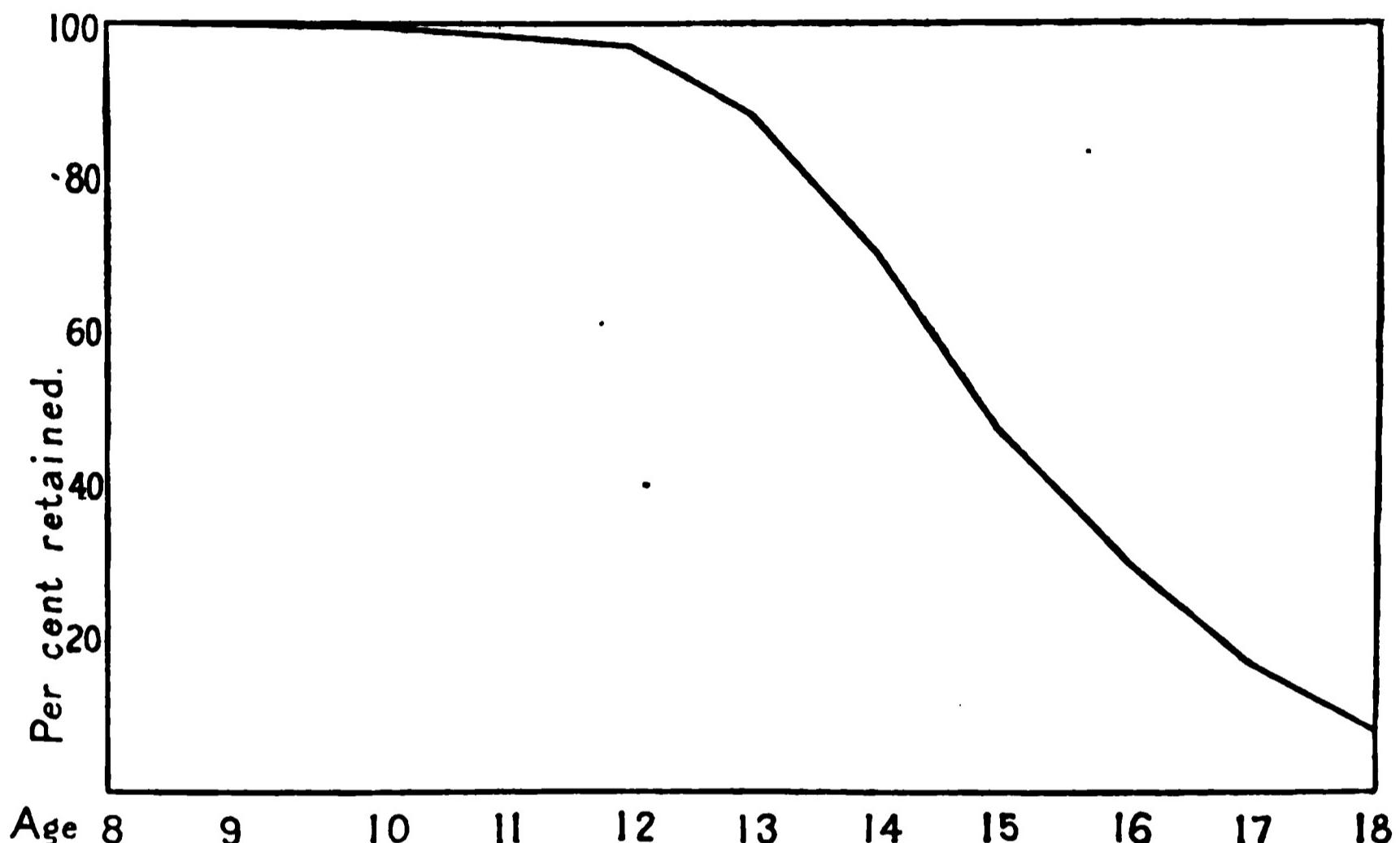


FIG. 8. Amount of elimination with respect to age.

At first sight it seems strange that so many pupils should stay in school till 10, 11, 12, 13, and 14, and so few till the fourth, fifth, sixth, and seventh and eighth grades. How, for instance, can we have 97 per cent of the 8-year-olds staying till they are 12, but only 68 per cent of those in the second grade staying till the sixth grade?

The fact is due to two main causes: (1) The second grade is harder than the later grades, more pupils staying a year and a half or two years in it than in the later ones; as a result, the percentages of retention of pupils in the later grades are a little lower when based on the second grade population than they would be if based on the number of pupils beginning school. (2) The elimination of pupils in any grade, but specially in the lower ones, is largely of older pupils. If we recall, for instance, the fact that in the sixth school grade in Connecticut in 1903 as many pupils were 13 or over as were under 12, we may understand that the 33 per cent of elimination before the sixth grade could take place largely at the expense of children 13 or more years old.

I have calculated what would be the grade retention if the age retention were 1,000 7 years old, 1,000 8 years old, 1,000 9 years old, 998 10 years old, 980 11 years old, 970 12 years old, 880 13 years old, 700 14 years old, 470 15 years old, 300 16 years old, 165 17 years old, and 86 18 years old (with the proper number 5 and 6 years old added), on the hypothesis that the per cents of children of given ages in the different grades is as found in the 1903 Connecticut report. The resulting figures are close to those obtained in the previous study, the discrepancy being due presumably to cause 1 just mentioned, that is, to the fact that "per cent retained of those in grade 2" will give somewhat lower figures than "per cent retained of those beginning school." The study of the age retention thus really verifies the approximate accuracy of the results of the study of grade retention.

The essential facts are given in Figure 9 and the legend beneath it. The details are given in Table 2.

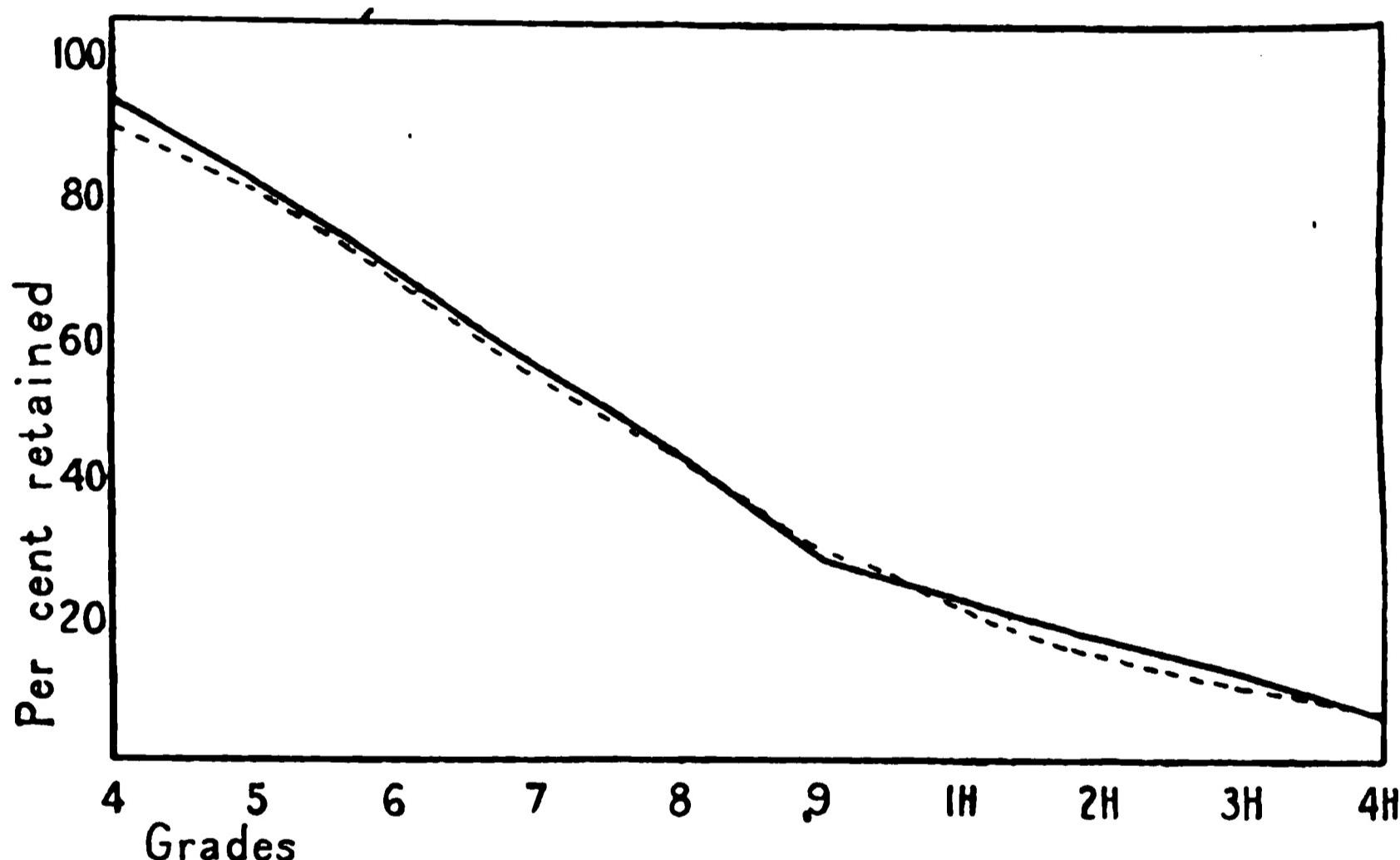


FIG. 9.—The continuous line shows the retention in the different grades (4 to 4 H. S.) as calculated on the basis of the age retention stated in the text and the age-grade distribution found in Connecticut in 1903. The dotted line shows the retention in the different grades as stated in the text, Part I, §2.

TABLE 2.—*Showing the grade retention when the age retentions of the text are distributed according to the age-grade relation found in Connecticut in 1903.*

Age.	Kinder-garten.	Grade.					
		1.	2.	3.	4.	5.	6.
3 and 4 years.....	160.0	60.0	.....	.....	.....	.....	.....
5 years.....	242.0	358.0	12.0	1.2	.....	.....	.....
6 years.....	82.0	639.0	120.0	12.0	2.2	0.1	.....
7 years.....	21.0	472.0	382.0	107.0	15.8	.9	0.1
8 years.....	3.0	203.0	366.0	310.0	99.0	16.0	3.2
9 years.....	1.2	67.0	215.0	342.0	266.0	82.0	20.0
10 years.....	.6	31.0	97.0	231.0	310.0	224.0	86.0
11 years.....	.3	14.3	40.0	121.0	233.0	274.0	192.0
12 years.....	.2	7.3	21.6	63.3	147.0	224.0	240.0
13 years.....	.1	7.1	11.5	32.3	85.0	152.0	206.0
14 years.....	.1	1.6	4.3	10.2	26.2	54.0	98.0
15 years.....	.1	.4	1.0	2.7	7.1	12.0	31.0
16 years.....	.....	.....	.1	.4	1.4	2.4	6.5
17 years.....	.....	.....	.1	.1	.2	.9	1.1
18 years.....	.....	.....	.....	.....	.....	.1	.2
Over 18 (estimated).....	.....	.....	.....	.....	.....	.....	.....
Totals.....		1,861	1,271	1,233	1,191	1,052	884
In per cents of grade 2.....					93.7	82.8	69.6
Per cents obtained in direct study.....					90	81	68

Age.	Grade.						
	7.	8.	9.	10.	11.	12.	13.
3 and 4 years.....	.....	.....	.....	.....	.....	.....	.....
5 years.....	.....	.....	.....	.....	.....	.....	.....
6 years.....	.....	.....	.....	.....	.....	.....	.....
7 years.....	.....	.....	.....	.....	.....	.....	.....
8 years.....	0.1	0.1	.....	.....	.....	.....	.....
9 years.....	3.5	.8	0.3	0.1	.....	.....	.....
10 years.....	16.6	3.4	.3	.1	.....	.....	.....
11 years.....	80.0	19.2	3.3	.5	0.1	.....	.....
12 years.....	166.0	73.5	18.1	7.1	.5	.....	.....
13 years.....	220.0	144.0	64.0	21.8	7.4	0.5	.....
14 years.....	143.0	173.0	111.0	60.0	17.0	2.3	0.2
15 years.....	64.0	106.0	96.0	80.0	47.0	20.0	1.6
16 years.....	16.0	38.0	52.6	70.0	65.0	38.0	8.9
17 years.....	2.9	7.4	14.0	33.0	40.5	47.0	17.4
18 years.....	.2	1.1	3.5	9.0	19.0	32.0	21.0
Over 18 (estimated).....	.....	.....	.....	5.0	10.0	20.0	20.0
Total.....	712	566	363	287	207	160	70
In per cents of grade 2.....	56.1	44.6	28.6	22.6	16.3	12.6	5.5
Per cents obtained in direct study <sup>a</sup> .....	54	40	27	17	12	8	.....

<sup>a</sup> In the Connecticut report grade 9 is a composite of the first high school grade of some cities and towns and the last grammar grade of others; Grade 10 is a composite of second high and first high; and so on, grade 13 being the last high school grade of only a part of the cities. Hence the per cents 44.6 to 5.5 do not fit the per cents 40 to 8, but run beyond them at both ends.

### § 6. *The Variability amongst Cities.*

The variability amongst cities is discussed in Part V. It is large in amount. Comparing three cities which retain very high percentages with three cities which retain very low percentages, we find that the former keep one and a half times as many pupils to 14, twice as many to 15, three times as many to 16, and three and a half times as many to 17 and 18. As in the case of grade elimination, local differences in the nature of the pupils themselves are probably more important causes of this variability than differences in the administration of the school systems.

*§ 7. The Course of Elimination.*

The general course of elimination with increased age is for this group of cities such that practically no pupils drop out before 12, but that of 100 in school at 8, 9 leave while only 12 years old, 18 while 13 years old, 23 while 14, 17 while 15, 13 or 14 while 16, and 8 while 17. Or 9 per cent of those in school at 12 leave before they reach 13, 20.5 per cent of those 13 leave before they reach 14, 33 per cent of those 14 leave before they reach 15, 36 per cent of those 15 leave before they reach 16, 45 per cent of those 16 leave before they reach 17, and 48 per cent of those 17 leave before they reach 18.

Considering the causes producing elimination as increasing by the addition of new forces and the preservation of all the old, and considering the form of distribution of the 8-year-olds with respect to the amount of force remaining to eliminate them to be that of Figure 6, and calling the force required to eliminate the most easily eliminated pupil  $F_l$ , and the force required to eliminate all but the last out of a hundred  $F_m$ , and calling  $F_m - F_l$  equal to  $C$ , the increases in eliminating force for the different years are, in terms of hundredths of  $C$ , as follows:

*Increase in eliminating force at different ages.*

	Increase.		Increase.
Eleventh year...}	3	Fifteenth year.....	17.5
Twelfth year...}		Sixteenth year.....	14
Thirteenth year.....	10	Seventeenth year.....	14+
Fourteenth year.....	15	Eighteenth year.....	14-

## PART III. SPECIAL REPORTS.

### § 8. *Elimination with Respect to Sex.*

Through the kindness of many high-school principals I have secured additional data concerning the elimination of pupils in the high school, data in which the facts for the two sexes are separated.

Table 3 gives (1) the ratio of the number of boys in the second, third, and fourth grades of the high school to the number of boys in the first (lowest) grade for each high school, (2) the same for girls, and (3) the ratio of the number of boys in the lowest grade of the high school to the number of girls in the same grade. For the reason that in these cities the number of inhabitants 15 to 19 years of age equals or exceeds the number 10 to 14, and for the general reasons given in discussing the elimination by age, these ratios can be used without correction for a rough estimate of elimination from the public schools. The effect of adding also facts from the private school attendance of pupils belonging to these cities would be, I believe, indifferent with respect to the more rapid elimination of boys. In any case it would be slight.

Table 4 gives these same data (in the form of percentages instead of ratios) distributed so as to show the great variability in high school elimination. The medians at the foot of the table measure the extent to which in general the girls outlive the boys in the high school.

TABLE 3.—*Retention by grades in the case of high schools for the sexes separately.*

[ $\frac{1}{2}$ =the second grade's population divided by the first grade's; similarly, for  $\frac{3}{2}$ ,  $\frac{4}{3}$ , etc.]

	Boys.			Girls.			
	2 1	3 1	4 1	2 1	3 1	4 1	1B 1G
Allentown, Pa.....	0.693	0.572	.....	0.530	0.454	.....	0.765
Atlantic City, N. J.....	.703	.500	0.217	.513	.372	0.244	.949
Auburn, N. Y.....	.723	.325	.181	.859	.370	.304	.902
Bay City, Mich.....	.521	.313	.125	.577	.321	.227	.701
Bayonne, N. J.....	.316	.053	.088	.794	.476	.206	.905
Binghamton, N. Y.....	.647	.396	.245	.844	.402	.279	.946
Birmingham, Ala.....	.552	.388	.104	.856	.423	.309	.690
Boston, Mass.....	.740	.403	.235	.611	.494	.331	.692
Brockton, Mass.....	.667	.399	.315	.729	.396	.419	.837
Canton, Ohio.....	.684	.406	.214	.827	.417	.331	.921
Chattanooga, Tenn.....	.400	.418	(?)0	.526	.603	.154	.706
Chester, Pa.....	.606	.151	.169	.716	.375	.205	.750
Council Bluffs, Iowa.....	.707	.346	.360	.684	.596	.377	.658
Dallas, Tex.....	.466	.311	.243	.700	.371	.312	.632
Davenport, Iowa.....	.392	.210	.168	.539	.362	.335	.941
Dubuque, Iowa.....	.536	.288	.192	.705	.295	.295	1.025
Duluth, Minn.....	.701	.351	.409	.590	.366	.339	.749
East St. Louis, Ill.....	.303	.257	.242	.408	.368	.168	.528

TABLE 3.—Retention by grades in the case of high schools for the sexes separately—Cont'd.

[ $\frac{1}{2}$ =the second grade's population divided by the first grade's; similarly, for  $\frac{3}{2}$ ,  $\frac{4}{3}$ , etc.]

	Boys.			Girls.			1B 1G
	$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$	
Elizabeth, N. J.....	0.767	0.302	0.209	0.684	0.619	0.237	0.566
Elmira, N. Y.....	.862	.517	.422	1.009	.598	.581	.991
Erie, N. Y.....	.789	.356	.308	.615	.482	.511	.771
Fitchburg, Mass.....	.647	.384	.242	.832	.579	.442	1.042
Galveston, Tex.....	.429	.400	.257	.703	.392	.378	.473
Gloucester, Mass.....	.677	.677	.645	.735	.691	.721	.912
Harrisburg, Pa.....	.769	.692	.443	.766	.545	.283	.717
Haverhill, Mass.....	.924	.636	.471	.821	.621	.579	.695
Joliet, Ill.....	.532	.344	.250	.580	.320	.236	.640
Johnstown, Pa.....	.625	.516	.313	.701	.597	.286	.831
Macon, Ga.....	.500	.190	.....	.642	.431	.....	.679
Montgomery, Ala.....	.156	.031	.0	.595	.536	.250	.381
New Britain, Conn.....	.925	.510	.453	.938	1.016	.344	.828
Newton Center, Mass.....	.905	.762	.612	.661	.684	.544	.737
Norfolk, Va.....	.521	.417	.167	.477	.408	.279	.558
Oakland, Cal.....	.581	.375	.250	.653	.472	.317	.604
Portland, Me.....	.359	.538	.248	.734	.563	.375	1.433
Riverside, Cal.....	.800	.673	.491	.543	.500	.300	.786
Rockford, Ill.....	.952	.414	.299	.802	.522	.478	.765
Saginaw, Mich.....	.599	.197	.233	.477	.264	.295	.581
Salem, Mass.....	.581	.368	.274	.841	.660	.490	1.245
San Antonio, Tex.....	1.260	.766	.300	1.190	1.130	.365	.405
Savannah, Ga.....	.783	.367	.....	.605	.269	.....	.504
South Bend, Ind.....	.674	.202	.169	.842	.307	.347	.881
South Omaha, Nebr.....	.474	.195	.088	.886	.426	.276	.655
Spokane, Wash.....	.843	.433	.433	.827	.431	.371	.594
Tacoma, Wash.....	.401	.217	.179	.438	.189	.155	.800
Topeka, Kans.....	.900	.350	.436	.633	.421	.358	.582
Wheeling, W. Va.....	.572	.476	.333	.472	.445	.236	.583
Wilkes-Barre, Pa.....	.760	.342	.302	.828	.461	.288	.898
Yonkers, N. Y.....	1.022	.578	.433	.981	.583	.524	.874
Medians .....	.66	.39	.25	.70	.45	.31	.75

In calculating the medians only those cities with a course of at least four years have been used. That is, of the above list Allentown, Macon, and Savannah have not been used. It is probable, in fact almost certain, that for San Antonio, Tex., the first, second, third, and fourth grades, as reported, do not represent the same status as in the other cities.

It should be kept in mind that these grade populations, being records of one year only, do not give information sufficiently precise to allow inferences concerning small differences between cities to be made reliably.

TABLE 4.—High school elimination by sex, as shown by the frequencies of different per cents of retention.

Per cent of first grade retained.	Number of cities retaining the per cent to—					
	Second grade.		Third grade.		Fourth grade.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
0 to 4 per cent.....	.....	.....	1	.....	2	.....
5 to 9 per cent.....	.....	.....	1	.....	2	.....
10 to 14 per cent.....	.....	.....	1	.....	2	.....
15 to 19 per cent.....	1	.....	3	1	7	3
20 to 24 per cent.....	.....	.....	3	.....	10	7
25 to 29 per cent.....	.....	.....	2	2	5	9
30 to 34 per cent.....	2	.....	7	3	6	11
35 to 39 per cent.....	2	.....	9	9	1	6
40 to 44 per cent.....	3	2	6	8	6	2
45 to 49 per cent.....	2	3	2	5	3	2
50 to 54 per cent.....	4	4	5	4	.....	3
55 to 59 per cent.....	5	4	1	6	.....	2
60 to 64 per cent.....	4	3	1	3	2	.....
65 to 69 per cent.....	4	4	3	3	.....	1
70 to 74 per cent.....	5	8	.....	.....	.....	1
75 to 79 per cent.....	4	2	2	.....	.....	.....
80 to 84 per cent.....	2	9	.....	.....	.....	.....
85 to 89 per cent.....	1	3	.....	.....	.....	.....
90 to 94 per cent.....	4	1	.....	.....	.....	.....
95 to 99 per cent.....	1	1	.....	.....	.....	.....
100 per cent and over.....	2	2	.....	2	.....	.....
Median per cents.....	66	70	39	45	25	31

The general meaning of these tables may be stated in very few words. For every 100 girls in the first-year class of city high schools there are only, in general, 75 boys; of 100 girls in the first-year class, 30 leave before the second-year class, 25 more before the third, and 14 more before the fourth. For 100 boys the corresponding figures are 34, 27, and 14. A third more girls enter and fewer girls drop out. The elimination is very much larger than that in colleges and steadier. Roughly, a third of each class leave before reaching the next higher class. Whatever causes produce it work, then, throughout the high school course, work more pronouncedly on boys than on girls, work more in the South than in the North.

### § 9. *Elimination in Schools for Colored Children.*

For proper treatment this topic demands a special investigation, with data much more comprehensive than I have been able to secure. The results from the limited information which I have (given in Tables 5 and 9) are, however, worth presenting, because so far as they go they support a definite hypothesis whose importance should stimulate further investigation. It is that in our cities colored pupils, in general, (1) are less capable at school work, but (2) they and their parents are more appreciative of educational opportunity.

The evidence for this hypothesis is that the colored pupils stay to a greater age, but to less advanced grades. In the two cities where I have both age and grade populations this fact is very clear. It was also found to be the case in New York City in a slight investigation (unpublished) made in my department some years ago. In so far as the course of study in the colored schools is less difficult than that for corresponding grades in the schools for whites, the first part of the hypothesis is strengthened; in so far as the course of study for the colored is more difficult, it is weakened.

There is a minor hypothesis which is possibly of even greater practical significance. It is that though in general colored pupils stay to less advanced grades, a small fraction of them stay to more advanced. That is, the higher retention of white pupils weakens in the later high school grades and tends to become negative. Supposing this hypothesis to be proven by further study, and supposing also that the conditions of promotion are not such as to make the passage to the later high school grades very easy in comparison with the passage to the later grammar and early high school grades, we should presumably explain it by a greater variability in capacity for and interest in school work among the colored than among the white pupils.

This greater variability would mean greater possibility of racial improvement in the future, and would recommend that in the present the range of educational opportunity for the colored pupils be made very wide, the higher levels of opportunity being of course properly restricted to the most fit.

TABLE 5.—*Ratios which the per cents of retention for colored pupils are to the per cents of retention for white pupils.*

[ Taken directly from the age populations and grade populations without correction ]

	Elementary school grade.					High school year			
	4.	5.	6.	7.	8.	1.	2.	3.	4.
Little Rock...	0.75	0.62	0.68	0.54	0.53	0.57	0.58	0.60	0.79
Louisville....	.84	.62	.63	.53	.48	.77	.72	.73	1.23
Age.									
	10.	11.	12.	13.	14.	15.	16.	17.	18.
Little Rock...	1.08	1.02	1.07	1.05	1.07	1.08	1.21	1.28	1.72
Louisville...	1.06	1.09	1.15	1.22	1.58	1.42	2.54	2.05	1.83
	Elementary school grade.					High school year			
	4.	5.	6.	7.	8.	1.	2.	3.	4.
Washington	0.82	0.73	0.81	0.66	0.58	..	..	..	..
Houston...	.57	.42	.37	.26	..	..	..	..	..
Macon...	.63	.47	.38	..	..	..	..	..	..

#### § 10. Elimination in Colleges.<sup>a</sup>

The amount and direction of the selection in colleges, while not of so great public concern as in the case of the common schools, is of enough moment to demand serious study, especially since common administrative practice neglects it possibly even more than it does the similar selection in the lower schools.

I shall give facts concerning the amount of the elimination and its points of incidence in 34 colleges, and concerning the variations among 14 of these institutions with respect to the length of time an entering student is likely to stay in them. The data allow certain interesting hypotheses concerning the relative importance of intellectual inability, sloth, distaste, and poverty as causes for the elimination of students from college.

The facts to be reported are of two sorts. First we may compare the size of the freshman class in, say, 1900, with that of the sophomore class in 1901, that of the junior class in 1902, and that of the senior class in 1903. This comparison does not truly represent the facts for any particular college, because of the entrance on advanced standing of students from other colleges, the transfer of students to other colleges, the completion of the course in a year more or less than the usual four years, the repetition of single years by students who do not complete the course, the transfer to and from the group "special students," and absence from college for a year or more followed by return and completion of the course. It does truly represent the facts for the group of colleges as a whole except in the one particular that these institutions, representing, as they do, the better sixth, or perhaps eighth, of the degree-granting colleges, are

<sup>a</sup> § 10 is reprinted from the *Educational Review*.

on the whole more likely to receive additions on advanced standing than to lose students to other colleges by transfer. The figures by this method of comparison will then show probably less elimination than actually occurs in these 34 colleges.

In the second method of comparison the actual careers of the members of a class who enter in, say, 1900-1901, are followed in the catalogues. We get thus for John Smith a record of, "entered as a freshman in 1900-1901, was a sophomore in 1901-2, was a sophomore again in 1902-3, is not in the catalogue of 1903-4 in any class." Subject to the errors of the catalogues themselves and of searching and copying, this method gives the life-history of any freshman in the college he enters. Of course this method does not give the tendency of an individual to stay in college, but only in the particular college which he enters. Transfers to other colleges appear as total eliminations. The method does have the advantages of telling something about the particular hold a college maintains on its own entering classes, and of checking the results from the former method of comparison.

We may call these two methods:

- (1) The comparison of class populations.
- (2) The comparison of class permanences.

The colleges studied by method (1) are:

Adelbert (Western Reserve University).	Dartmouth.	University of Colorado.
Allegheny.	De Pauw.	University of Illinois.
Amherst.	Hamilton.	University of Iowa.
Beloit.	Harvard.	University of Minnesota.
Boston University.	Haverford.	University of Mississippi.
Bowdoin.	Hobart.	University of Tennessee.
Brown.	Mt. Holyoke.	University of Wisconsin.
College for Women (Western Reserve University).	Princeton.	Vassar.
Cornell.	Smith.	Washington University.
Columbia.	Tufts.	Wellesley.
	Union.	Wesleyan.
	University of California.	Yale.

The colleges studied by method (2) are:

Amherst.	Hobart.	University of Wisconsin.
Beloit.	Princeton.	Vassar.
Bowdoin.	University of California.	Wesleyan.
Columbia.	University of Colorado.	Yale.
Harvard.	University of Tennessee.	

The facts are given in detail in Tables 6 and 7, which will repay somewhat careful study by the reader who will figure out from them the answers to the questions which arise in his mind. In brief, we find from the comparison of class populations in Table 6 that, if the size of the freshman class be taken as 100, the sophomore class of a year later ranges from 56 to 108; half of the classes are below 80; the

most frequent sizes are 70 to 74 and 80 to 84; 50 per cent of the classes are between 71 and 85. The junior class of two years later ranges from 30 to 104; half of the classes are below 68; the most frequent sizes are 65 to 69 and 75 to 79; 50 per cent of the classes are between 56 and 78. The senior class of three years later ranges from 29 to 93; half of the classes are below 70; the most frequent sizes are 70 to 75; 50 per cent of the classes are between 56.5 and 77.

The most striking facts are the extreme range, the great differences between institutions with respect to the proportion of students who leave college, and the apparent retention through the senior year of practically all the students who have remained till the junior year. These matters may best be reserved for discussion until the class permanences are compared.

TABLE 6.—*Class populations of American colleges.*

	2	3	4	3	4	4	3	2	3	4	Reliability of —
	1	1	1	2	2	3	1	1	1	1	
University of Tennessee	64	36	29	56	45	81	8.4	10.5	10.7		
University of Mississippi	74	63	35	72	47	66	13.5	5.5	12.4		
Hobart	65	46	36	70	55	79	7.5	8.5	10.0		
University of Colorado	58	46	45	79	77	97	8.1	7.0	8.1		
Allegheny	61	31	46	51	75	147	8.4	5.4	8.1		
Union	67	56	48	84	71	86	10.0	10.0	10.0		
University of Iowa	56	43	40	77	88	114	8.0	8.0	8.0		
University of Minnesota	66	56	50	86	76	89	8.0	8.0	7.0		
De Pauw	66	49	57	74	86	117	8.6	15.0	22.0		
Beloit	63	65	59	78	72	91	4.0	4.6	3.4		
Adelbert (Western Reserve)	72	64	60	80	83	94	3.6	7.8	6.4		
Brown	74	60	61	81	83	102	1.5	1.5	11.4		
Tulane	71	67	61	94	86	91	3.5	5.8	2.7		
Wesleyan	81	60	66	85	81	96	4.3	6.4	3.6		
Vassar	76	64	67	84	88	104	4.2	3.5	3.9		
Wellesley	79	66	67	84	85	101	5.1	4.2	2.0		
Dartmouth	91	72	69	70	78	96	5.0	5.8	5.8		
Mount Holyoke	91	70	70	87	77	89	10.8	12.0	8.2		
Washington University	74	67	71	91	96	106	12.0	12.0	12.0		
Hamilton	84	70	72	90	86	95	4.2	5.0	9		
Amherst	86	75	73	85	82	97	3.0	2.9	2.8		
University of Illinois	60	79	74	99	92	93	5.9	2.9	3.6		
Columbia	82	83	74	102	91	99	0.0	8.5	11.0		
Cornell	72	62	75	87	105	121	3.6	4.2	1.5		
Smith	85	72	76	85	89	106	3.5	3.9	3.5		
Harvard	108	82	77	76	71	94	.0	1.2	3.9		
College for Women (Western Reserve)	84	76	78	90	93	103	2.0	3.6	9.2		
Princeton	95	88	82	93	89	93	2.7	3.9	2.7		
Havard	82	69	63	84	100	120	4.4	1.5	9.3		
Boston University	81	78	84	98	104	108	4.6	6.6	3.1		
University of Wisconsin	74	78	84	105	114	108	1.2	8.5	4.3		
Yale	90	85	90	94	100	106	5.3	4.4	2.7		
University of California	92	105	91	113	98	87	2.0	12.0	9.2		
Bowdoin	98	97	93	99	94	95	3.3	2.0	3.3		
Range	56-108	31-105	29-33	51-113	45-114	66-147					
Limits including 50 per cent	71-85	56-78	56-77	70-93	70-93	91-106					
Median (below which are 50 per cent)	79.5	68	69.5	85	86	96					
Reliability of median	3.0	4.7	4.3	3.0	3.7	3.2					

\* Approximate.

## EXPLANATION OF TABLE 6.

In the column headed 1 is given for each college the per cent that the number of students in the sophomore class is of that in the freshman class of the year before. In the column headed 2 is given the per cent that the number of students in the junior class is of that in the freshman class of two years before. In the column headed 3 is given the per cent that the number of students in the senior class is of the freshman class of three years before. The columns headed 4, 5, and 6 give similarly the percentages of junior on sophomore of one year before, of senior on sophomore of two years before, and of senior on junior of one year before.

The colleges are arranged in the order of the percentages of senior on freshman of three years before (column 4).

The reliabilities of the percentages of sophomore, junior, and senior on the freshman population of one, two, and three years before are given in the form of figures, the meaning of which is in each case that the chances are less than one out of ten that the true percentage would vary from that given by more than the reliability figure given. For instance, the record of Tennessee should be read as follows: The sophomore class is most probably 64 per cent of the freshman, and there is not one chance in ten that if we had complete records this percentage would rise above 72.4 or fall below 55.6. The junior class is most probably 36 per cent of the freshman, and there is not one chance in ten that with complete knowledge this would rise above 46.5 or fall below 25.5. The senior class is most probably 29 per cent of the freshman and there is not one chance in ten that with complete information this would rise above 39.7 or fall below 18.3.

The great differences in the reliabilities of the different percentages are due to the facts (1) that for some colleges only two, and for others as many as five, series of four classes were compared, and (2) that the classes vary so in size, and also (3) that the dropping out year by year is far more regular in some colleges than in others.

The figures for the reliabilities of the medians have the same significance, that there is only one chance out of ten that the median from perfect measures of the entire group of which these 34 colleges are a random sampling would differ from the obtained median by the amount stated.

The facts of class permanence emphasize the variability between institutions in the retention through the senior year of students who have remained through the junior year. This retention means often, however, that the student is engaged in professional studies though registered as a college senior. The facts are given in Table 7.

TABLE 7.—*Class permanences of 14 American colleges.*

	$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$
University of Tennessee.....	47	24	18
University of Colorado.....	52	34	20
Hobart.....	66	41	26
University of Wisconsin.....	73	63	53
Beloit.....	75	61	56
Columbia.....	83	72	60
Vassar.....	74	64	61
Wesleyan.....	78	67	63
Harvard.....	95	90	64
University of California.....			72
Amherst.....	94	78	73
Princeton.....	91	86	88
Bowdoin.....	95	84	81
Yale.....	90	84	82
Range.....	47-95	24-90	18-82
Limits including 50 per cent.....	73-91	61-84	53-73
Median.....	78	67	62
Reliability of median.....	7	6	7

#### EXPLANATION OF TABLE 7.

Columns  $\frac{2}{1}$ ,  $\frac{3}{1}$ , and  $\frac{4}{1}$  refer to the continuance of entering students for two, three, and four years respectively.

The reliability measures mean, as in Table 6, that there is less than one chance in ten that the median obtained from complete knowledge of the group of which these 14 colleges are a random sampling would differ from the median given by more than the amount stated.

Using the facts of class permanence and our general knowledge of the arrangements of American colleges as a guide, we may now draw conclusions from the more elaborate facts of class populations.

It would be unwise to compare individual institutions at all minutely, because of the many modifying circumstances of registration systems, and because of the unreliability due to the small number of classes. Such a comparison should be made by the administrative officers of colleges, using for their own college the records of six or eight classes, which would give an unreliability of from three to less than one. Comparisons with the medians in Tables 6 and 7 would then be extremely significant.

Though the exact position of any individual college is not determined by this study, the fact of the great variability among colleges is. There can be no doubt that the inclusion of a hundred more colleges would even increase the diversity. There can be no doubt that some colleges are three times as likely as others to keep a student for four years. This variability—found also in the cost per student, in the number of instructors per hundred students, in the amount of prescribed course work, in the amount of professional work allowed to count toward the degree, and in almost every feature of college work—shows how variable is the work done by "the college," and how utterly unsettled are the ideas of college officers as to what work it should do. There can also be no doubt that a part of this variability is due not to the wealth or intellect of the entering students but to the attachment the college arouses. The movement of students during their course from small to large colleges, and the influence of geographical location with its related conditions, are also apparent.

The amount of elimination, though not comparable with that which occurs in city high schools (it is only one-half as great), is sufficient to make the practice of making freshman and sophomore courses introductory rather than general questionable, and to demonstrate that a college degree is a symptom of a certain degree of health, ambition, wealth, and capacity, as well as of training. Putting the facts of both populations and permanences together, we may conclude that the median continuance in some college of the classes entering these 34 colleges is, to a second year, 79 per cent; to a third year, 68 per cent; and to a fourth year, 66 per cent. The medians for all American colleges with an annual income of \$30,000 or over would probably be lower. The percentages of all students continuing are probably slightly higher, because students entering the larger colleges are more likely to continue in college.<sup>a</sup>

Withdrawal from a college is most frequent in the first year,<sup>b</sup> and least frequent by far in the third.<sup>c</sup> Using the medians of Tables 6 and 7, we find that for 100 students in an entering class there are a year later 20 fewer, whereas the decrease from the third to the fourth year will be perhaps 2; of 100 students entering a college 22 will leave it after one year, 11 after the second, and only 5 after the third. These facts have two practical consequences of some moment. (1) Elimination by incapacity, indolence, and distaste is surely a chief cause of the first year's loss. This elimination is, I believe, more useful to the college than the elimination before admission by entrance

<sup>a</sup> This does not make the percentages of all students much higher than the median percentages for classes, because of a skewness in the distribution of continuance by classes. This can not be shown in detail here.

<sup>b</sup> Including the interval between the first and the second year.

<sup>c</sup> Including the interval between the third and the fourth year.

examinations. (2) The student within a year of his degree will almost universally give up a year to get it, and is thus penalized one year in the colleges where professional work will not count toward it. He may be given the worth of his time, but it would seem wiser for such colleges so to cooperate with universities in their neighborhood as to leave the student a free choice between a degree with a year's professional work to his credit or a degree with an additional year of academic courses. Thus of our list Beloit, Tufts, Wesleyan, and Haverford ought perhaps to obtain for their students the advantages of certain professional or advanced academic courses in Wisconsin, Harvard, Yale, and Pennsylvania, respectively.

The feminization of education which is said with much reason to be in prospect for America is not apparent in these records. The facts are not adequate, but, so far as they go, they show no marked difference between the sexes in continuance in college. The class populations of the 4 colleges for women in our list show medians differing by only + 2, + 3, and - 1 from the medians for the other 30. (See Table 8.) The length of time spent in Vassar in the case of Vassar students is almost at the median of the class permanences for the 14 colleges studied, the figures being 74, 64, and 61 for Vassar, and 78, 67, and 62 for the medians of the 14. In the case of the universities of Colorado, Tennessee, and Wisconsin, the proportion of students remaining four years was calculated separately for men and women. In the two former more men stayed; in the latter, more women. The differences thus about counterbalance each other and are slight. (See Table 8.) In so far as these three are a random sampling from colleges in general, we have a right to say that the most likely fact is that about 98 per cent as large a proportion of women as of men stayed four years, and that the chances are nine out of ten that the true ratio is not less than 88 nor more than 106.

TABLE 8.  
A—CLASS POPULATIONS OF COLLEGES FOR WOMEN.

	<sup>2</sup> <sub>1</sub>	<sup>3</sup> <sub>1</sub>	<sup>4</sup> <sub>1</sub>
Vassar.....	76	64	67
Wellesley.....	79	66	67
Mount Holyoke.....	91	79	70
College for Women (Western Reserve).....	84	76	78
Medians.....	81.5	71	68.5
Corresponding medians for colleges for men and women.....	79.5	68	69.5

B—PERCENTAGES STAYING FOUR YEARS.

	Men.	Women.	Men-women.
University of Colorado.....	29.2	27.8	1.4
University of Tennessee.....	17.1	15.2	1.9
University of Wisconsin.....	47.8	53.7	-5.9

The purpose of Parts IV and V of my report is to give in convenient form for students of education, now and in the future, data concerning the elimination of pupils from school which could otherwise be collected only with great labor, and to give the critical reader of Parts I and II a means of working out for himself the answers to the questions which I discuss there.

The data are of course no more accurate than the census reports and school reports from which they come. I venture to remind the student that in the nature of the case comparisons between the single cities must be made with the utmost caution, since the exact ways in which the individual teachers and census recorders who actually get the facts do get them must necessarily be unknown, and since the general methods prescribed vary from city to city, and from year to year within the same city.

In spite of their inevitable lack of perfect precision and even approximate commensurability, the figures are far more enlightening than anybody's mere opinion. If used properly they will do much good and no harm, and, even if used crudely, will do much more good than harm.

## PART IV. DATA ON ELIMINATION BY GRADES.

### § 11. *The Original School Grade Populations.*

The data which were gathered by the author concerning school grade populations are given in Table 9.

## THE ELIMINATION OF PUPILS FROM SCHOOL.

TABLE 9.—*Grade populations of American cities, each for several years.*

	Elementary school grade.									High school year.			
	1.	2.	3.	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.
Baltimore, Md.:													
1898	11,592	9,434	8,272	6,447	4,022	2,471	1,640	817	238	888	592	345	207
1899	11,622	9,545	8,516	6,274	4,265	2,512	1,519	1,010	207	1,029	641	367	248
1902	12,375	10,305	8,585	6,200	4,274	2,863	2,023	1,324	403	1,324	787	613	403
1904	12,000	10,456	8,701	6,668	4,611	3,082	1,992						
Boston, Mass.:													
1895	11,885	8,163	6,922	6,943	6,615	6,292	5,115	3,831	125	2,948	795	807	209
1896	11,675	8,401	6,804	7,188	7,250	6,531	5,545	3,891	220	2,866	818	576	220
1897	12,169	8,331	8,160	9,160	9,000	8,330	8,039	3,894	621	4,823	854	670	221
1904	13,511	10,608						5,145		4,141	2,716	1,801	1,286
Bridgeport, Conn.:													
1892	1,376	1,455	1,306	1,169	1,029	567	600	513		6,328			
1893	1,495	1,447	1,289	1,168	1,904	753	667	416		6,300			
1894	1,909	1,337	1,425	1,973	1,149	624	473	6,316		6,316			
Cambridge, Mass.:													
1901	2,317	1,790	1,585	1,691	1,457	1,082	1,027	910		437	316	228	191
1902	2,408	1,778	1,641	1,658	1,449	1,120	973	993		464	305	250	196
1903	2,319	1,810	1,708	1,580	1,490	1,129	1,002	974		520	357	233	224
1904	2,209	1,845	1,706	1,669	1,464	1,158	1,141	952		661	568	373	210
Chicago, Ill.:													
1897	41,950	22,776	30,110	25,767	23,424	16,796	11,691	8,280		3,535	2,233	1,494	1,160
1898	43,827	33,248	30,088	25,749	23,663	17,596	12,421	8,678		2,805	2,346	1,540	1,138
1899	44,810	34,874	29,863	25,784	23,896	18,236	13,089	9,270		2,455	2,455	1,615	1,238
1900	47,409	36,014	31,099	26,033	24,013	18,359	13,897	9,988		2,592	1,742	1,294	1,294
1902	44,623	37,184	32,450	27,168	25,077	18,428	13,662	10,928		4,176	2,495	1,511	1,304
Cleveland, Ohio:													
1898	12,257	8,074	7,851	7,267	5,875	4,637	3,488	2,373		1,292	877	569	505
1901	12,619	8,653	8,590	8,108	6,522	5,278	3,583	2,472		1,512	996	604	477
1903	12,904	9,094	8,838	8,952	6,900	5,511	3,893	2,708		1,584	933	714	565
1904	13,411	9,437	9,352	9,256	7,424	6,051	4,312	2,820		1,716	1,065	727	625
Columbus, Ohio:													
1887	2,738	1,334	1,328	1,350	1,226	907	659	508		1,238	308	84	63
1890	2,452	1,443	1,384	1,299	1,230	1,031	737	593		1,560	420	242	217
1898	2,492	1,685	1,780	1,826	1,776	1,474	2,263	1,884		1,238	1,006	856	343
1903	3,968	2,303	2,554	2,474	2,474	1,471	1,471	1,132		1,392	982	464	303
Denver, Colo.:													
1895	2,075	1,261	1,489	1,659	1,249	1,024	642	442					
1896	2,033	1,496	1,365	1,558	1,447	1,108	727	527					
1897	2,458	1,445	1,265	1,586	1,295	1,186	772	662					
1901	2,305	1,812	1,600	1,794	1,433	1,392	958	733					
Houston, Tex.:													
White—													
1890	452	379	322	292	240	240	116	116					
1893	684	554	590	415	301	181	181	181					
1895	638	633	749	519	441	318	212	212					

## **DATA ON ELIMINATION BY GRADES.**

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## **THE ELIMINATION OF PUPILS FROM SCHOOL.**

TABLE 9.—*Grade populations of American cities, each for several years—Continued.*

	Elementary school grade.					High school year.								
	1.	2.	3.	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.	
Milwaukee, Wis.:														
1894.	3,716	3,348	2,890	2,426	1,799	1,348	875							
1895.	4,074	3,541	3,214	2,574	2,167	1,477	1,097							
1903.	4,272	3,744	3,214	2,846	2,226	1,736	1,183							
Minneapolis, Minn.:														
1891.	6,803	3,810	3,087	2,467	1,992	1,309	839	763	428	306	287			
1898.	9,720	4,441	4,551	3,941	3,170	2,406	1,652	538	441	504				
1899.	11,146	4,544	4,645	3,875	3,197	2,510	1,650	1,067						
1903.	9,637	4,975	4,985	5,201	4,172	3,583	2,706	2,004	1,477	701				
Newark, N. J.:														
1897.	6,134	4,324	4,098	3,217	2,464	1,801	1,373	634	337	142	108			
1898.	6,043	4,626	4,028	3,409	2,630	1,778	1,298	904	628	212	119			
1900.	6,674	4,800	4,031	3,686	2,583	1,842	1,284	875	395	328	141			
1902.	7,342	5,239	4,363	3,543	2,851	2,002	1,290	900	255	231	207			
1903.	6,801	5,929	5,340	4,317	3,246	2,455	1,607	1,186						
New Haven, Conn.:														
1900.	2,742	2,278	1,901	1,971	1,703	1,484	1,236	774	475	348	252	163		
1901.	2,858	2,269	2,025	2,041	1,793	1,509	1,249	727	551	320	295	172		
New York, N. Y.:														
1895.	40,998	35,943	29,203	23,198	19,603	13,068	10,770							
1896.	54,619	37,138	30,902	29,673	21,146	14,255	12,001							
Brooklyn, N. Y.:														
1894.	18,738	21,664	18,716	17,011	14,323	9,584	5,985	3,720						
1895.	20,042	22,054	19,432	17,264	15,013	10,764	6,442	4,167						
1896.	23,348	21,846	20,101	18,136	15,706	11,722	7,314	4,440						
Newport, R. I.:														
1896.	405	335	355	331	207	184	166	108	104	66	31	21		
1901.	550	404	391	420	277	232	199	177	132	73	35	31		
1903.	487	461	453	431	357	308	200	184	161	91	42	24		
Omaha, Nebr.:														
1895.	3,221	2,147	1,990	1,889	1,723	1,322	1,031	764	555	255	158	95		
1898.	2,597	2,075	2,120	2,052	1,802	1,621	1,359	824	681	407	154	107		
1899.	2,802	2,209	2,035	2,284	1,764	1,609	1,377	903	695	353	199	116		
1903.	2,427	1,972	1,925	2,215	1,927	1,406	1,130	1,130	1,130	379	217	163		
Passaic, N. J.:														
1898.	779	472	410	208	150	106	54	50	27	35	19			
1900.	1,070	582	456	451	217	147	125	107	43	23	12			
Paterson, N. J.:														
1892.	2,074	1,716	1,526	1,113	787	632	348	247	208	142	88	40		
1900.	2,114	2,177	1,893	1,754	1,498	986	683	417	350	226	173	113		
St. Louis, Mo.—White:														
1898.	2,349	2,189	1,872	1,745	1,416	1,009	614	350	226	173	113			
8,300	10,146	9,136	8,313	4,324	4,009	2,008	1,411	921	363	313				

## **DATA ON ELIMINATION BY GRADES.**

*§ 12. The Reliability of the Data as Representative of the General Tendencies of the Cities.*

The data for the 23 cities concerning which I have attempted to estimate the elimination grade by grade are repeated in Table 10, in the form of the per cent which the number of pupils in any given grade is of the number in the first, second, and third grades divided by 3. The data for the 23 chosen represent the state of affairs in years clustering closely about 1900.

The per cents, being calculated from only a few years' records, only approximately represent the general tendency of each city as distinct from others. But the approximation is very close, close enough for all the purposes of this investigation. I have calculated the probable divergence of the obtained per cents from the true per cents (meaning by true those which would be obtained were the influence of chance differences between one year's records and another's altogether eliminated) for the sixth grade, eighth grade, ninth grade (where there is such), first high school, and fourth high school, for 16 of the 23 cities. The results, which are given in Table 11, show that in general the chances are even that the divergence will be less than 3 per cent of the amount. So far as the number of year's records goes, then, we have enough to eliminate chance as the cause of any general characteristic of the elimination, or of any but the very small differences found between the cities.

TABLE 10.—School grade populations in terms of per cents of  $\frac{1+2+3}{3}$ .

Records used.	Elementary school grade.						High school year				
	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.	
Baltimore . . . . .	1888, 1899, 1902	63.6	47.4	28.9	19.7	13.0	...	7.3	4.4	2.6	1.7
Boston . . . . .	1895, 1896, 1897, 1904 <sup>a</sup>	79.8	73.8	60.7	56.9	45.2	36.1	20.1	11.9	9.2	3.7
Cambridge . . . . .	1901, 1902, 1903	85.3	76.1	57.0	52.0	40.8	37.1	18.6	13.1	9.8	8.5
Chicago . . . . .	1897, 1898, 1899, 1900	76.0	72.0	63.7	38.6	27.4	...	10.8	7.3	4.8	3.7
Cleveland . . . . .	1898, 1901, 1903	82.1	65.2	52.1	37.0	25.5	...	14.8	9.5	6.4	5.2
Denver . . . . .	1895, 1896, 1897, 1901, 1903 <sup>b</sup>	93.0	78.9	60.3	49.4	37.5	...	...	...	...	...
Jersey City . . . . .	1897, 1898, 1899, 1903	62.6	53.7	39.0	26.4	18.5	...	6.3	3.7	2.0	1.6
Kansas City, Mo. . . . .	1900, 1901, 1902	78.7	57.7	47.2	37.1	...	...	20.5	19.2	13.5	11.7
Los Angeles . . . . .	1899, 1899, 1900, 1901	78.0	71.0	50.0	44.0	30.0	...	24.2	12.8	6.6	3.9
Maiden . . . . .	1898, 1899, 1902	75.6	75.0	63.8	47.6	44.8	37.1	28.7	18.0	10.7	8.4
Minneapolis . . . . .	1898, 1899, 1903 <sup>c</sup>	67.1	53.3	38.0	30.4	22.2	...	17.2	11.3	9.0	5.5
Newport . . . . .	1896, 1901, 1903	88.2	80.2	61.9	46.3	42.1	33.0	20.7	17.2	8.8	5.7
Newark . . . . .	1897, 1898, 1900, 1902	67.3	50.6	36.1	25.2	17.9	...	12.1	6.9	4.4	2.8
New Haven . . . . .	1900, 1901	85.5	74.5	63.8	53.0	32.0	...	21.9	14.2	11.7	7.1
New York . . . . .	1895, 1896, 1903 <sup>c</sup>	81.8	67.3	48.9	35.3	26.8	...	...	...	...	...
Paterson . . . . .	1900, 1901	83.3	69.5	49.6	30.4	18.3	...	10.8	5.3	4.7	3.3
St. Louis (white) . . . . .	1898, 1900, 1901	65.5	60.4	36.7	24.8	17.2	...	12.2	4.3.8	4.3.5	2.8
Springfield . . . . .	1900, 1901, 1902, 1903	83.8	73.7	65.4	52.6	41.0	29.3	22.4	15.5	11.4	7.6
Trenton . . . . .	1897, 1899, 1902	63.8	51.6	41.0	31.1	20.2	...	13.4	6.7	7.2	6.1
Washington (white) . . . . .	1900, 1901, 1902	80.0	71.0	57.0	47.0	42.0	...	...	...	...	...
Waterbury . . . . .	1896, 1898, 1899, 1900, 1902	83.0	78.0	63.0	48.0	36.0	...	23.8	16.7	9.4	4.6
Wilmington . . . . .	1895, 1896, 1897, 1898, 1904 <sup>d</sup>	85.7	75.8	60.2	48.7	33.2	...	26.8	10.0	7.5	...
Worcester . . . . .	1897, 1901, 1902	96.4	90.4	89.1	67.4	66.8	53.0	38.5	27.6	20.3	22.9

<sup>a</sup> The records for 1895, 1896, and 1897 together are given the same weight as the record for 1904.

<sup>b</sup> The records for 1895, 1896, 1897, and 1901 together are given the same weight as the record for 1903.

<sup>c</sup> The 1903 record is counted as of twice the weight of the 1893 and 1894 records together.

<sup>d</sup> I am doubtful of these three records, but am unable to find any error in them.

<sup>e</sup> The records for 1895, 1896, 1897, and 1898 together are given the same weight as the record for 1904.

TABLE 11.—Median deviations of the obtained per cents on  $\frac{1+2+3}{3}$  from the "true" per cents in the case of certain grades in 16 cities.

[The entries are all somewhat too large, for they are necessarily calculated from the variation in the per cents on  $\frac{1+2+3}{3}$  of single years. The obtained results of Table 10, however, are calculated from the per cents of the sums of the different year's grade populations to the sums of the  $(1+2+3)$ s divided by 3, and so give less scope to chance.]

	Elementary school grade.			High school year	
	6.	8.	9.	1.	4.
Baltimore	0.5	0.5	—	0.2	0.04
Boston	2.0	.1	0.4	.5	.2
Cambridge	.4	.8	0	.4	.25
Chicago	.3	3	—	4	.25
Cleveland	—	—	—	—	—
Denver	1.3	1.7	—	—	—
Jersey City	.5	.3	—	.3	.08
Kansas City, Mo	—	—	—	—	—
Los Angeles	1.4	.7	—	—	—
Malvern	3	1.4	1.6	1.7	.4
Minneapolis	—	—	—	—	—
Newark	4	4	—	3	.21
New Haven	—	—	—	—	—
Newport	5.3	3	1.9	1.3	.17
New York	—	—	—	—	—
Paterson	—	—	—	—	—
St. Louis (white)	1.8	9	—	.7	.17
Springfield	1.8	1.1	.9	1.3	.25
Trenton	—	—	—	—	—
Washington (white)	6	5	—	—	—
Waterbury	1.7	1.1	—	1.4	.74
Wilmington	1.0	6	—	3	.8
Worcester	2.1	1.9	—	1.5	.42

### § 13. The Process of Estimating Actual Elimination from the Facts of Grade Populations.

To estimate from the data of Tables 9 and 10 the proportion of pupils entering school and living sufficiently long who continue to any given grade is a task of much intricacy. To do it with the adequacy and precision one would desire is, as has been said, impossible. My own estimates for 23 cities have been given in Table 1 (p. 15). These estimates involve the use of the facts of the school grade populations given in Table 9 corrected, (1) by data concerning the death rate during the school age; (2) by data concerning the growth of the cities; (3) by data concerning the school grade populations of successive years (that is, by the comparison of, say, the second grade population of 1898 with the third grade population of 1899, the fourth grade population of 1900, etc.); (4) by data concerning the relation between the first, second, and third grade populations and the number entering school in a year; and (5) by data concerning the intermigration of city and country children of school age. It would be unprofitable to anyone except the critical student of statistical problems for me to rehearse the details of this tedious process of corrections. I therefore give only the essentials.

The data concerning (1) the death rate, and (5) the gross result of it plus the migration of young people to and from cities, are given on page 55.

Data concerning the growth of the cities can be obtained to some extent by comparing the census of 1890 with the census of 1900. The increase of the 5 to 10 year olds of 1900 over the 5 to 10 year olds of 1890, for instance, is significant. Possibly useful data are the increases of the first, second, and third grade populations of the later years of Table 9 over the similar populations of the earlier years. These increases are caused not only by the growth of population, but also by any changes in the proportion of children who are sent to the public schools, and by any change in the degree to which grades 1, 2, and 3 require a longer time for completion than other grades.

Table 12 gives such data for the 23 cities.

The directly observed relations between the population of a given grade in a given year and the population of the next higher grade in the following year have been worked out in great detail for all of the 23 cities. Samples of the treatment (Springfield and Omaha) are shown in Table 13. If all other information were discarded and the problem was taken to be simply to trace one grade population through on the hypothesis that everyone moved ahead a grade a year and that no one moved out of or into the city, and that consequently the seventh grade of 1902 equaled the second grade of 1897, minus those who were eliminated up till 1902, and so on, the per cents thus obtained would be the final result. Such per cents have been given much weight in correcting the results from contemporaneous grade populations.

TABLE 12.—*Annual rate of increase of population for certain cities.*<sup>a</sup>

	Annual ratio of increase of 5 to 9 year olds, 1890-1900.	Annual ratio of increase of 10 to 14 year olds, 1890-1900.	Annual ratio of increase of grades 1, 2, and 3 from early to late records.
Baltimore.....	.0125	.0178	.0025
Boston.....	.0338	.017	.013
Cambridge.....	.0342	.0196	.012
Chicago.....	.0596	.064	.02
Cleveland.....	.044	.037	.04
Denver.....	.052	.059	.03
Jersey City.....	.035	.018	.03
Kansas City, Mo.....	.022	.0285	.028
Los Angeles.....	.103	.092	.08
Malden.....			.053
Minneapolis.....	.0385	.0518	.04
Newport.....			.015
Newark.....	.0345	.027	.04
New Haven.....	.0395	.0266	.03
New York.....	.038	.032	.04
Paterson.....	.0367	.0214	.025
St. Louis (white).....	.024	.023	.00
Springfield, Mass.....	.053	.0397	.016
Trenton.....	.030	.0252	.02
Washington (white).....	.0107	.000	.02
Waterbury.....	.069	.06	.07
Wilmington.....	.0302	.0225	.018
Worcester.....	.0477	.0318	.014

<sup>a</sup> The annual ratios of increase in this table are approximate, being the ratios of increase for the given period of years divided by the number of years in the period.

TABLE 13.—Samples of the data giving the directly observed relationships between the population of given grades and the population of the next higher grade a year later, a grade two steps higher two years later, and the like.

[Each number in the first column shows the given grade. The numbers to the right show the per cents which higher grades taken in appropriate later years are of the given grade. For example, the sixth line in the case of Springfield should read: "For 1,000 pupils in the fourth grade in a given year there were in the fifth grade a year later, 987; in the sixth grade, two years later, 858; in the seventh grade, three years later, 793."]

## SPRINGFIELD, MASS.

Grade.	Elementary school grade.						High school year.			
	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.
1+2+3	80.0	78.8	72.4	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.	102.0	78.3	.....	.....	.....	.....	.....	.....	.....	.....
Do.	97.1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fourth	76.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do.	98.4	90.3	.....	.....	.....	.....	.....	.....	.....	.....
Do.	98.7	85.8	79.3	.....	.....	.....	.....	.....	.....	.....
Do.	92.3	81.4	72.0	57.6	.....	.....	.....	.....	.....	.....
Fifth	.....	98.7	85.0	70.0	52.9	.....	.....	.....	.....	.....
Sixth	.....	.....	85.9	73.9	52.5	49.0	.....	.....	.....	.....
Seventh	.....	.....	.....	88.3	67.0	62.8	54.0	.....	.....	.....
Eighth	.....	.....	.....	.....	81.6	59.2	56.2	44.7	.....	.....
Ninth	.....	.....	.....	.....	.....	78.5	50.3	45.3	31.9	.....
High school year:	.....	.....	.....	.....	.....	.....	72.3	54.0	45.1	.....
First	.....	.....	.....	.....	.....	.....	.....	81.0	51.0	.....
Second	.....	.....	.....	.....	.....	.....	.....	.....	73.3	.....
Third	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

## OMAHA, NEBR.

Grade.	Elementary school grade.					High school year.			
	4.	5.	6.	7.	8.	1.	2.	3.	4.
1+2+3	73.5	65.7	.....	.....	.....	.....	15.6	.....	.....
3	.....	.....	.....	62.1	.....	.....	.....	.....	.....
Do.	.....	.....	77.4	.....	.....	.....	.....	.....	.....
Do.	.....	.....	.....	67.3	48.4	.....	.....	.....	.....
Fourth	.....	86.0	.....	.....	.....	33.4	.....	.....	.....
Do.	.....	.....	.....	50.0	.....	.....	.....	.....	.....
Do.	.....	.....	.....	54.3	39.8	.....	.....	.....	.....
Fifth	.....	.....	89.4	.....	.....	.....	18.5	.....	.....
Do.	.....	.....	.....	.....	.....	49.0	24.0	.....	.....
Sixth	.....	.....	.....	.....	.....	.....	23.1	.....	.....
Do.	.....	.....	.....	.....	.....	39.6	19.4	.....	.....
Seventh	.....	.....	.....	.....	.....	.....	15.8	.....	.....
Do.	.....	.....	.....	.....	.....	.....	20.1	15.2	.....
Eighth	.....	.....	.....	.....	.....	.....	.....	.....	.....

The hardest correction to make intelligently is that for the inequality of the different grades in length. Some systems apparently keep pupils nearly twice as long in the first grade as in the third. (It would of course be absurd to suppose that the great drop in grade populations from grade 1 to grade 2 is due to actual elimination from school.) The number of pupils entering school is in many cases less than the number in the first grade, and even less than one-third of the number in grades 1, 2, and 3.

Moreover, we have no assurance that the later grades are equal in respect to the proportion of pupils who take more than a year to complete them, though the differences are here probably small, and may be neglected for the purposes of this study. The main difficulty is in inferring from the number in grades 1, 2, and 3 the number beginning school in the course of a year.

My correction for this is arbitrary. I have simply made the estimate of the number of pupils beginning school for any city which

seemed most likely in view of the comparative sizes of the populations of grades 1, 2, 3, 4, and 5, and of whatever other relevant information I possessed concerning the city.

For instance, in Baltimore, where the grade populations are as follows:

	Population.		Population.
First grade.....	54,097	Fourth grade.....	25,373
Second grade.....	35,328	Fifth grade.....	18,921
Third grade.....	29,284		

and the  $\frac{1+2+3}{3}$  figures 39,570, I have, in view of the other known facts about the city, taken the population of grade 2 as a measure of the number of pupils beginning school. In Denver, New Haven, St. Louis, Waterbury, and Worcester, I have judged that the  $\frac{1+2+3}{3}$

figure was a correct representation of the number of pupils beginning school annually. In Trenton, where the first grade population is over twice the second in size, but the third practically equal to the second (the populations being respectively 7,361, 3,348, 3,329, and 2,985) I have taken a figure about 3 per cent larger than the second grade population as the correct representative of the number of pupils beginning school.

There is no doubt that in all this process of correction some injustice of considerable amount may have been done to one or two cities. It would be risky to use the small differences between, say, Minneapolis and Trenton (see Table 1, page 15) as proof that either city was better in holding pupils, because the differences are small, and because for these two cities the corrections for the five factors were among the largest in influence and the most insecure. In general, however, the emphasis of the various corrections is, I am confident, free from any serious error. The general degree of retention will not, I should say, vary more than 5 or 6 per cent from the amount stated. The average of the three or four highest and the average of the three or four lowest cities would maintain very nearly the same relation if the data were perfect individual histories of children instead of the complex we have been treating. Better data, less dependent on subjective opinion, would alter the exact amount of some of the quantitative estimates of Part I, but they would hardly alter any of the general statements made there.

I have worked over in a similar but less elaborate manner the data for cities given in the 1904 Report of the United States Commissioner of Education (p. 1312), and get as the estimated number of 100 entering pupils who remain to each grade the following:

	Median retention.		Median retention.
Fourth grade.....	90	First high school year.....	29.5
Fifth grade.....	82	Second high school year.....	17
Sixth grade.....	73	Third high school year.....	12
Seventh grade.....	58	Fourth high school year.....	7.55
Last grammar grade.....	41		

Making use of (1) the results just stated, and also of (2) certain results obtained by calculating the relations of grade populations given in the 1898 Report of the United States Commissioner of Education to the populations for appropriately higher grades given in the 1904 Report, and also (3) of the results for 46 high schools studied separately, in connection with the results from the elaborate study of 23 cities, we may take as the most probable general tendency to retention the following figures:

	Retention.		Retention.
Fourth grade.....	90	First high school year.....	27
Fifth grade..	81	Second high school year.....	17
Sixth grade.....	68	Third high school year.....	12
Seventh grade.....	54	Fourth high school year.....	8
Last grammar grade .....	40		

How clearly they approximate to the true result for the cities of which those studies made a random sampling I can not state absolutely, but their median divergence from the true figures can hardly be over 3 per cent of the given amounts for grades 4 and 5, over 5 per cent of the given amounts for grades 6 and 7, or over 10 per cent of the given amounts for the remaining grades.

#### §14. Additional Data.

Since the main body of facts was collected and elaborated, I have been able to secure suitable information concerning ten more large cities and two suburban communities. I estimate that, for these cities, of a hundred pupils entering school and living till 18 years of age the number remaining to any given grade is as stated in the table below. It has not been possible to work these estimates out with as complete precautions as in the case of those in the main body of this report, but they are probably accurate within from 2 to 8 per cent.

TABLE 14. *Per cent of entering pupils who remain to a given grade.*

	Elementary school grade.						High school year.			
	4	5	6	7	8	9	1.	2	3	4.
Buffalo, N.Y.	100	83	78	65	52					10
Chester, Mass.	99	87	84	68	50	40	28	18	13	11
Cincinnati, Ohio	85	69	55	35	25		14	8	6	5
Dayton, Ohio	96	84	60	53	38					9
Medford, Mass.	100	93	89	83	69	60	42	28	22	18
Milwaukee, Wis.	86	76	62	48	34		14	8	7	
New Orleans, La.	90	66	45	31	20					
Philadelphia, Pa. <sup>a</sup>	71	58	38	26	18		11	7	5	2.5
Portland, Me.	96	82	71	60	47	40	30	20	16	12
Salt Lake City, Utah	90	82	68	53	44		22	14	9	7
Springfield, Ohio	100	92	76	60	46		34	19	11	9
Syracuse, N.Y.	93	80	66	53	43					

<sup>a</sup> This is an estimate for pupils entering in 1895. The elimination of pupils has been growing less severe in recent years.

For the convenience of students of the general subject I add here (Table 15) the data of the 1904 Report of the United States Com-

missioner of Education put in the form of percentages on the first and second and third grade populations divided by 3, and the data given in the 1898 Report (Table 16):

TABLE 15.—*School grade populations of 1903 or 1904 in percentages of  $\frac{1+2+3}{3}$ .*

[Calculated from page 1312 of the 1904 Report of the United States Commissioner of Education.]

	Elementary school grade.						High school year.				4.
	4.	5.	6.	7.	8.	9.	1.	2.	3.	4.	
Aurora.....	68	81	90	56	71	.....	40	28	23	18	
Baltimore.....	67	51	36	24	15	.....	10	6	4	3	
Beloit.....	88	75	77	58	55	.....	38	23	19	17	
Beverly.....	95	84	81	73	66	39	37	29	17	18	
Boston.....	81	75	72	58	48	37	25	15	11	5	
Brockton.....	90	86	80	73	60	42	.....	.....	.....	.....	
Cambridge.....	87	76	60	59	50	35	29	20	15	11	
Camden.....	70	44	32	19	11	.....	4	4	3	2	
Chester.....	75	74	72	41	26	.....	19	13	6	4	
Chicago.....	71	66	49	36	29	.....	11	6	4	4	
Chicopee.....	77	66	58	49	30	16	16	10	7	4	
Cincinnati.....	77	64	52	38	26	.....	15	8	5	3	
Cleveland.....	86	69	56	40	26	.....	16	10	7	6	
Clinton.....	85	78	72	44	42	.....	33	13	13	10	
Columbia.....	72	61	50	32	27	.....	25	11	6	.....	
Columbus, Ohio.....	84	77	64	50	38	.....	33	21	16	10	
Davenport.....	78	77	75	58	44	35	29	14	10	5	
Denver.....	89	79	70	54	41	.....	.....	.....	.....	.....	
Erie.....	75	54	32	16	.....	.....	.....	.....	.....	.....	
Haverhill.....	108	94	88	73	57	50	29	23	17	16	
Houston.....	75	60	53	34	.....	.....	34	12	9	8	
Jersey City.....	66	57	44	29	21	.....	6	3	2	1	
Johnstown.....	92	89	73	57	44	24	14	10	5	6	
Kansas City, Kans.....	80	61	56	49	35	.....	26	14	6	5	
Kansas City, Mo.....	78	59	47	38	.....	.....	29	18	13	10	
Lacrosse.....	87	61	50	36	23	.....	.....	.....	.....	.....	
Los Angeles.....	83	77	65	50	35	.....	25	10	6	4	
Lynn.....	82	82	72	66	48	.....	35	.....	.....	.....	
Madison.....	82	70	71	62	51	.....	49	37	32	21	
Malden.....	67	67	67	48	44	38	33	21	15	9	
Minneapolis.....	79	64	55	41	31	.....	23	14	11	7	
Newark.....	72	54	41	26	19	.....	.....	.....	.....	.....	
Newport.....	93	87	79	50	43	40	35	19	9	5	
Newton.....	86	90	72	70	59	55	41	38	30	24	
New York.....	86	72	53	37	28	.....	.....	.....	.....	.....	
Ogden.....	106	83	74	56	42	.....	21	12	8	9	
Omaha.....	106	93	86	67	54	.....	43	17	10	8	
Pawtucket.....	75	65	44	33	28	22	.....	.....	.....	.....	
Philadelphia.....	69	54	34	24	16	.....	.....	.....	.....	.....	
Portland, Oreg.....	102	91	81	67	42	36	.....	.....	.....	.....	
Quincy.....	79	76	82	71	63	.....	38	26	12	10	
Racine.....	84	79	49	35	35	.....	21	11	11	5	
Reading, Pa.....	92	88	72	37	23	.....	.....	.....	.....	.....	
Richmond.....	84	75	61	42	.....	.....	32	17	10	2	
St. Louis.....	82	60	37	28	18	.....	12	5	4	2	
Salem.....	83	73	63	63	39	39	30	23	14	17	
Salt Lake.....	90	81	68	51	42	.....	18	10	6	5	
Somerville.....	89	84	78	70	59	43	28	23	17	16	
Spokane.....	76	65	55	35	27	.....	21	12	10	6	
Springfield, Mass.....	97	74	71	66	46	34	31	24	15	8	
Washington.....	82	74	57	48	41	.....	25	14	7	5	
Waterbury.....	80	78	59	52	31	23	17	12	5	7	
Wheeling.....	67	66	44	30	20	.....	11	7	4	3	
Williamsport.....	92	71	63	54	38	30	25	17	7	6	
Wilmington.....	94	85	78	53	35	.....	31	9	8	8	
Worcester.....	84	83	83	61	60	42	31	21	15	14	
York.....	82	63	45	31	24	.....	16	11	8	7	

TABLE 16.—School grade populations; reproduced from the 1898 Report of the U. S. Commissioner of Education.

Data reported.	Date.	Kinder-Garten.	Elementary school grade					High school grade.							
			1.	2.	3.	4.	5.	6.	7.	B.	9.	1.	2.	3.	4.
San Francisco, Cal.	Number belonging		5,320	4,445	4,420	4,145	4,145	4,145	4,256	3,339	2,815	2,046	1,866		
Denver, Colo.	Total enrollment	1897-'98	1,981	2,458	1,265	1,586	1,205	1,186	1,027	773	625	316	165	75	
Wilmington, Del.	Number belonging	1896-'97	1,982	1,444	1,241	1,170	984	927	554	425	425	3,266	2,141	1,453	967
Chicago, Ill.	Average daily membership	1897-'98	28,943	32,948	29,623	24,636	22,121	15,505	10,846	7,422	7,422				
Washington, D. C.	Total enrollment	1896-'97	8,949	6,472	5,761	5,426	4,743	4,021	3,163	2,892	2,892				
Baltimore, Md.	Average number belonging	1895-'96	15,194	11,127	8,982	7,427	6,656	5,934	5,388	5,388	5,388				
Boston, Mass.	Number on roll	1896-'97	3,925	12,937	8,910	7,410	7,815	7,038	6,722	5,447	4,833	3,462	672	423	243
Cambridge, Mass.	Number belonging	1896-'97	683	2,363	1,681	1,499	1,168	1,133	1,020	850	685	524	292	824	370
Lowell, Mass.	do	1897-'98	454	2,046	1,312	1,165	1,017	1,072	934	760	644	450	300	196	182
Worcester, Mass.	Total enrollment	1897-'98	563	2,727	2,390	2,175	2,021	1,990	1,929	1,543	1,392	1,162	770	500	405
Minneapolis, Minn.	do	1896-'97	... 1,806	9,026	8,324	4,370	3,425	3,112	2,774	1,787	1,227	1,007	544	350	254
Kansas City, Mo.	do	1896-'97	... 1,609	4,941	3,009	2,760	2,682	2,305	1,925	1,600	1,303	1,045	700	400	330
St. Louis, Mo.	Number belonging	1897-'98	13,524	12,245	11,104	7,586	3,940	3,053	1,985	1,377	1,377	601	410	290	190
Omaha, Nebr.	Total enrollment	1897-'98	2,851	2,597	2,073	2,130	2,050	1,921	1,239	934	651	407	154	107	
Jersey City, N. J.	Number belonging	Nov. 30, 1896	5,496	5,496	3,470	3,408	2,182	1,474	1,050	740	569	303	128	92	
Newark, N. J.	Average enrollment	1896-'97	913	5,731	4,343	4,015	3,082	2,325	1,678	1,304	60	185	86	86	77
Trenton, N. J.	Number belonging	Nov. 30, 1897	2,324	1,641	1,085	985	705	561	2,306	2,306	2,306				
Buffalo, N. Y.	Total enrollment	1896-'97	12,652	6,834	5,871	5,375	4,921	3,718	2,900	2,116	2,116				
Cincinnati, Ohio	do	1897-'98	... 860	9,806	6,970	6,034	5,790	4,634	4,001	2,701	1,701	1,106	503	369	255
Cleveland, Ohio	Number belonging	1897-'98	860	11,373	8,074	7,831	7,267	5,875	4,857	3,478	2,872	1,282	678	569	509
Philadelphia, Pa.	Total enrollment	Dec. 31, 1897	7,210	35,203	24,090	22,650	16,790	12,986	8,929	5,937	4,120	2,106	1,044	740	540
Richmond, Va.	do	1896-'97	2,140	1,861	1,861	1,620	1,503	1,503	1,046	829	829	670	404	240	
Milwaukee, Wis.	Average enrollment	1896-'97	3,220	7,359	4,272	3,744	3,214	2,846	2,226	1,737	1,737	1,737			

## PART V. ELIMINATION BY AGE.

### § 15. *The Original Data of Age Populations.*

Table 17 gives such data as I have been able to gather concerning the number of pupils of each year-age in the public schools of 25 cities.

Table 18 gives the facts of Table 17 for ages of 10 and over in percentages on the number of 7, 8, and 9 year olds divided by 3, which is practically the same as the number of 8-year-olds, a single set of such percentages being calculated from all the records together for any city.



## THE ELIMINATION OF PUPILS FROM SCHOOL.

TABLE 17.—Showing for 25 cities the distribution by age of pupils in the public day schools (elementary and secondary.)

	B.	7	8	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	Avg.
Baltimore, Md.:															
1887.....	6,040	5,573	7,610	7,537	7,113	6,817	6,485	5,876	2,405	1,230	642	260	90	30	
1888.....	6,115	7,325	7,786	7,757	7,059	6,880	5,471	5,751	2,382	1,274	602	250	90	30	
1901.....	6,465	7,182	7,710	7,783	6,956	7,871	6,715	6,519	2,284	1,109	556	264	90	30	
Boston, Mass.:															
1894.....	5,604	6,139	6,633	6,224	5,268	5,825	5,823	5,886	4,707	3,306	2,053	1,121	571	200	
1895.....	5,818	6,389	6,520	6,065	6,432	6,160	6,045	5,744	4,787	3,263	2,032	1,113	628	220	
1897.....	6,085	6,589	6,693	6,807	6,733	6,178	6,244	5,860	4,900	3,583	2,261	1,221	621	240	
1903.....	8,407	8,233	8,170	7,916	8,035	7,480	7,601	7,086	6,868	3,626	2,322	1,378	687	234	
Cleveland, Ohio:															
1894.....	6,906	5,530	5,630	5,248	5,333	4,743	4,562	3,920	2,960	1,648	975	635	220	30	
1895.....	6,765	5,907	5,938	5,433	5,463	4,725	4,952	4,860	3,092	1,717	950	580	220	30	
1897.....	7,266	8,277	6,046	5,670	5,509	4,855	5,091	4,819	3,167	1,646	1,002	600	220	30	
1898.....	8,165	8,421	6,225	5,860	5,643	5,149	5,178	4,927	3,428	1,864	1,005	645	220	30	
1900.....	8,154	7,087	6,878	6,282	5,892	5,231	5,440	4,985	3,732	2,005	1,003	674	220	30	
1901.....	8,753	7,096	6,981	6,161	6,161	5,509	5,661	4,784	3,740	1,985	1,058	637	220	30	
1902.....	8,624	7,030	7,205	6,723	6,638	5,735	5,659	4,973	3,497	1,946	1,085	636	220	30	
1904.....	8,149	7,672	7,684	7,239	6,555	6,706	6,011	5,850	2,057	1,085	768	220	30		
Chicago, Ill.:															
1900.....	20,716	32,423	29,806	28,256	27,091	25,024	24,050	20,171	14,645	9,570	6,129	220	30		
1901.....	41,753	32,006	30,606	28,753	27,766	25,829	24,242	20,374	14,026	9,403	5,832	220	30		
Columbus, Ohio:															
1899.....	2,046	1,856	1,850	1,777	1,800	1,563	1,003	1,600	1,354	1,004	621	173	59	91	
1902.....	2,044	1,874	2,108	2,052	2,034	1,850	1,857	1,731	1,477	977	720	220	30		
Dayton, Ohio.															
1900.....	1,326	1,324	1,320	1,326	1,326	1,296	1,219	1,168	802	656	310	240	105	30	
1901.....	1,451	1,320	1,383	1,344	1,316	1,298	1,202	1,128	938	623	336	220	145	30	
Denver, Colo.:															
1897.....	1,359	1,084	1,147	1,084	1,085	1,020	1,035	983	980	743	625	260	120	30	
1898.....	1,204	1,282	1,052	1,070	1,156	1,086	1,080	1,033	725	583	367	220	120	30	
1899.....	1,230	1,286	1,286	1,239	1,239	1,114	1,106	860	708	556	367	220	107	30	
1900.....	1,265	1,296	1,359	1,310	1,275	1,173	1,168	1,087	900	716	531	383	217	117	
1901.....	1,182	1,330	1,372	1,468	1,336	1,206	1,221	1,118	923	788	678	202	215	87	
Fitchburg, Mass.:															
1901.....	1,366	1,534	1,622	1,474	1,462	1,384	1,287	1,813	1,235	1,077	714	367	220	116	
Grand Rapids, Mich.:															
1899.....	1,372	1,646	1,667	1,545	1,530	1,424	1,381	1,301	1,163	1,049	691	328	207	113	
1901.....	1,322	1,643	1,382	1,441	1,520	1,453	1,427	1,402	1,246	1,062	676	297	200	97	
1904.....	1,310	1,414	1,497	1,357	1,633	1,422	1,336	1,244	1,022	614	315	200	97		
Jersey City, N. J.:															
1897.....	2,783	3,021	3,083	3,039	3,124	2,843	2,896	2,676	1,906	1,161	627	160	67	10	
1898.....	2,155	3,348	3,265	3,188	3,185	2,914	2,886	2,500	1,861	1,455	630	210	67	10	
1899.....	3,506	3,971	3,665	3,462	3,346	3,346	3,344	3,185	2,866	2,153	1,054	430	141	72	

## **EILMINATION BY AGE.**

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### • Approximate:

TABLE 13.—Showing for 25 cities the per cents which the 10-year-olds, 11-year-olds, etc., in school, are of the number of 8-year-olds, approximately, by giving the per cents which they are of the sum of the 7, 8, and 9 year olds divided by 3.

[Calculated from the data of Table 17.]

	Years reported.	Age.									
		10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
Baltimore .....	1897, 1898, 1901 ..	104.0	98.4	91.3	73.3	30.9	31.8	16.1	8.0	3.8	1.0
Boston.....	1894, 1896, 1897, 1903 ..	99.6	93.4	93.6	88.8	72.4	50.3	31.6	17.5	9.1	3.3
Cleveland .....	1895, 1896, 1897, 1898, 1900, 1901, 1902, 1904 ..	93.3	82.3	81.4	73.4	54.0	29.3	16.4	10.1	—	—
Chicago .....	1900, 1901 ..	90.4	83.5	79.5	67.9	45.3	31.4	10.7	—	—	—
Columbus, Ohio .....	1898, 1902 ..	88.3	85.5	91.7	86.1	73.1	51.2	35.0	21.4	10.4	3.9
Dayton .....	1900, 1901 ..	97.2	91.2	88.9	85.3	64.7	39.4	22.2	17.6	11.8	8.1
Denver .....	1897, 1898, 1899, 1900, 1901, 1902, 1904 ..	97.9	91.8	90.4	81.8	73.8	59.9	44.1	28.9	18.2	9.0
Fitchburg .....	1901 ..	84.4	86.7	84.4	83.1	51.5	42.6	29.2	14.6	6.2	1.0
Grand Rapids .....	1898, 1901, 1903, 1904 ..	102.0	95.6	94.2	83.2	86.3	71.9	42.7	21.5	14.6	7.3
Jersey City .....	1897, 1898, 1899 ..	97.0	90.0	80.1	76.2	56.4	33.7	18.0	4.5	2.1	0.8
Johnstown .....	1903 ..	107.0	99.7	86.6	88.9	62.8	40.3	19.1	9.2	6.3	2.3
Kansas City, Kans .....	1900, 1901 ..	106.4	101.5	99.1	88.4	74.9	54.8	38.4	25.5	12.8	4.8
Kansas City, Mo .....	1900, 1901 ..	102.1	92.4	91.1	83.5	71.0	57.0	38.3	24.1	13.6	5.3
Little Rock .....	1895, 1896 ..	101.6	100.0	95.4	80.3	77.3	57.5	36.7	16.6	8.2	2.3
Los Angeles .....	1899, 1900, 1901 ..	101.4	91.9	86.8	77.7	67.9	40.1	31.8	19.2	10.1	5.9
Louisville .....	1896, 1898 ..	93.5	80.9	85.3	74.1	53.6	42.1	19.3	12.7	6.9	2.8
Minneapolis .....	1898, 1900, 1902, 1904 ..	98.8	91.8	91.0	81.8	70.0	50.6	39.5	18.8	11.3	5.0
Newark .....	1901, 1902, 1903 ..	94.0	83.8	80.4	59.7	35.7	18.7	10.4	5.2	2.8	1.6
New Orleans .....	1901, 1902 ..	99.3	88.3	84.6	70.0	51.3	23.2	13.4	6.2	3.4	2.3
Omaha .....	1898, 1899 ..	89.8	79.7	81.8	74.7	58.2	42.8	27.2	14.7	6.6	2.8
Springfield, Mass .....	1899, 1900, 1901, 1902, 1903 ..	91.0	88.9	87.0	85.0	76.3	58.5	39.0	24.1	14.5	5.9
St. Joseph .....	1891, 1892 ..	11.5	92.5	87.1	72.3	56.4	48.8	—	—	—	—
St. Paul .....	1893 ..	87.4	73.7	74.2	61.9	54.3	35.8	26.2	10.3	7.7	3.4
Toledo .....	1894, 1899 ..	85.3	74.6	76.3	67.6	58.8	37.6	21.5	10.8	4.1	1.7
Troy .....	1891, 1895, 1896 ..	12.0	92.5	100.0	79.0	63.9	35.7	20.1	12.4	7.6	4.5
Medians .....	— ..	98.7	91.2	88.9	79.0	63.9	42.6	26.7	15.0	7.8	3.4

<sup>a</sup> Approximate.

### § 16. *The Reliability of Age Data from a Few Years as Representative of the General Tendencies of Cities.*

The general tendency of a city as shown in a long series of years is, of course only approximately represented by the figures of Table 18, calculated from only a few years' statistics.

The closeness of the approximation can be calculated by well known formulæ based on the theory of probability. I have to this end calculated the percentages of 10, 11, 12, etc., year olds on  $\frac{7+8+9}{3}$  year olds for each year's record from Springfield (five years), Minneapolis (four years), Cleveland (eight years), and Dayton (two years), and from these individual year percentages have calculated the probable closeness of the approximation for a record from one year only, for a record from two years, etc. The chances are even that the results obtained for 10-year-olds will not diverge from the true per cents by more than—

1.7 per cent of the per cent obtained, one year's records being used.

1.2 per cent of the per cent obtained, two years' records being used.

1.0 per cent of the per cent obtained, three years' records being used.

.8 per cent of the per cent obtained, four years' records being used.

.8 per cent of the per cent obtained, five years' records being used.

For other ages the corresponding figures are obtained by dividing a given constant, computed for each age, by the square root of the number of years' records used. The value of the constant for each age is as follows:

	Value of constant.		Value of constant.
11-year-olds.....	1.9	15-year-olds.....	4.8
12-year-olds.....	2.6	16-year-olds.....	5.3
13-year-olds.....	3.5	17-year-olds.....	5.7
14-year-olds.....	4.1		

To get the figures such that the chances are 99 to 1 against greater divergence, multiply the figures for even chances by  $3\frac{1}{4}$ .

For example, the obtained result from Denver for 16-year-olds is 44.1, calculated from five years' records. The chances are even that the true per cent for Denver 16-year-olds will not diverge from 44.1

by more than  $\frac{5.3}{\sqrt{5}}$  per cent of 44.1, or 1.1. That is, the chances are even that the true per cent will lie between 43 and 45.2.

The chances are even that the medians calculated from these 25 cities will not diverge from the medians of the entire group of cities from which these are a random sampling by more than the following per cents for the different ages:

	Per cent.		Per cent.
10-year-olds.....	0.85	15-year-olds.....	1.8
11-year-olds.....	.9	16-year-olds.....	1.8
12-year-olds.....	.75	17-year olds.....	1.1
13-year-olds.....	1.35	18-year-olds.....	.55
14-year-olds.....	1.8	19-year-olds.....	.3

### *§ 17. The Process of Estimating Actual Elimination from the Facts of School Age-Populations.*

The figures of Tables 17 and 18 obtained from the contemporaneous age populations need to be viewed in the light of the fact that in these cities the number of children 10 or 11 or 12 etc. years old is not the same as the number of 8-year-olds. Just what the ratios are in each city is not known, nor are the ratios for the cities as a group known more than approximately. An accurate census by year ages is needed for this. By the natural birth-rate minus death-rate increase there are in the entire country, for every 1,324 from 5 to 9, 1,175 from 10 to 14, and 1,057 from 15 to 19 (Abstract of 12th Census, p. 12); that is, 88.7 and 79.8 per cent, respectively. In the cities as a group this condition holds approximately for the 10 to 14 group, but not at all for the 15 to 19 group, the 1890 and the 1900 censuses giving for the corresponding per cents approximately 91 and 96. (See Table 19.) These differences are due to a very slight degree probably to differences between the urban and the general birth rate, and to a large degree to

the fact that inter-migration of city and country children gives the cities more boys and girls from 10 to 14, and many more from 15 to 19, than it removes. Individual cities vary very widely from the general tendency of the group, some cities having as many children 10 to 14 as 5 to 9, and others only 80 per cent as many. The variation in the ratio which the number at 15 to 19 bears to the number 5 to 9 is still more variable. I shall not in general try to estimate the number of children at each year age in each city, but shall do so only for each age group as a whole.

Table 19 gives the per cent which the 10 to 14 year olds are of the 5 to 9 year olds in each of these same cities by the census of 1900, and also of 1890, and the per cent which the 15 to 19 year olds are of the 5 to 9 year olds by the census of 1890. The per cents are calculated from data in Table 83 of the Abstract of the Twelfth Census, 1900, pages 109-111.

TABLE 19.—*Per cents which the general populations 10 to 14 years old and 15 to 19 years old were of the population 5 to 9 years old in 1890 in certain cities; also the per cents which the population 10 to 14 years old were of the 5 to 9 years old in 1900.*

	1890.		1900.		1890.		1900.	
	10-14 5-9	15-19 5-9	10-14 5-9	10-14 5-9	15-19 5-9	10-14 5-9	15-19 5-9	10-14 5-9
Baltimore, Md.....	91.5	96.0	95.7	New Haven, Conn.....	95.9	b 109.0	87.7	
Boston, Mass.....	99.1	108.6	86.5	New Orleans, La.....	97.3	95.9	94.1	
Cambridge, Mass.....	98.5	a 112.8	87.9	New York, N. Y.....	93.3	106.0	85.0	
Cleveland, Ohio.....	91.1	89.5	86.4	Omaha, Nebr.....	77.9	86.7	89.8	
Chicago, Ill.....	83.9	86.2	85.6	Paterson, N. J.....	97.0	97.8	86.1	
Columbus, Ohio.....	100.1	109.2	98.0	Somerville, Mass.....	91.9	95.3	83.7	
Dayton, Ohio.....	93.6	100.0	.....	Springfield, Mass.....	94.2	108.8	86.0	
Denver, Colo.....	84.5	97.4	88.1	St. Joseph, Mo.....	98.6	106.2	85.6	
Fitchburg, Mass.....	.....	.....	87.0	St. Louis, Mo.....	94.3	99.3	93.8	
Grand Rapids, Mich.....	90.6	91.3	89.1	St. Paul, Minn.....	80.0	87.8	85.7	
Jersey City, N. J.....	96.5	98.6	84.3	Toledo, Ohio.....	86.1	88.2	88.6	
Johnstown, Pa.....	.....	.....	80.4	Trenton, N. J.....	93.3	96.9	89.3	
Kansas City, Kans.....	83.3	84.3	87.1	Troy, N. Y.....	102.7	113.8	100.0	
Kansas City, Mo.....	90.4	106.0	95.5	Washington, D. C.....	106.0	113.0	95.8	
Little Rock, Ark.....	97.4	101.0	95.4	Waterbury, Conn.....	90.1	105.0	85.0	
Los Angeles, Cal.....	99.7	95.2	94.0	Wilmington, Del.....	98.3	101.5	92.3	
Louisville, Ky.....	102.5	110.8	96.1	Worcester, Mass.....	95.0	103.7	84.9	
Malden, Mass.....	.....	.....	88.6	Medians.....	94	99	88	
Minneapolis, Minn.....	78.9	90.3	86.6					
Newark, N. J.....	90.7	93.4	85.4					

<sup>a</sup> This 112.8 should probably be reduced to, say, 104 because of the special influence of Harvard College.

<sup>b</sup> This 109 should probably be reduced to, say, 100 because of the special influence of Yale College.

We may fairly take the percentages which the numbers of inhabitants of each age from 10 on are to the number of 7, 8, and 9 year olds divided by 3 as:

	Percentage.		Percentage.
10 years old.....	96	15 years old.....	90
11 years old.....	94	16 years old.....	92
12 years old.....	92	17 years old.....	98
13 years old.....	90	18 years old.....	102
14 years old.....	89		

We might then, to get for the group the per cent of the children of each age that are in school, divide through the figures representing

the central tendency of cities in order by 0.96, 0.94, 0.92, etc., that is divide the 98.7 of Table 2 by 0.96, the 91.2 by 0.94, the 88.9 by 0.92, and so on. The figures thus obtained would not, however, be truly significant for the years from 14 on, for the reason that among the 15 to 19 year olds migrating to the city, very many have already been eliminated from school in the country and come to the city specifically to work. We should have in our result a measure not only of the elimination in cities, but of the elimination in cities plus the nature of the selection by cities from other localities. On the other hand, to take ratios based exclusively on the birth rate minus death rate increase, whereby the 15 to 19 year olds are only 79.8 per cent of the 5 to 9 year olds, would be unfair, for the reason that many families move to the city so that older children can have the advantage of the high school, and some of the pupils counted in the city school populations, especially in the late years, come in daily from the surrounding country. Though the great majority of the 15 to 19 increase by immigration come to the cities to work, a small number come specifically to go to school.

On the whole, in order to compare the numbers actually in school with the numbers that would be if every child in the cities who is in school at 8 years of age, kept on in school till he was 19 (except for death), and if no one moved away from or moved into the cities, we may fairly balance the results of death and of immigration on the school age population records after 14, and regard the per cents with which the 98.7, 91.2, 88.9, etc., should be compared as follows:

*School expectation if no elimination existed*

	Percentage.		Percentage.
10 years old.....	96	15 years old.....	90
11 years old.....	94	16 years old.....	90
12 years old.....	92	17 years old.....	90
13 years old.....	90	18 years old.....	90
14 years old.....	90		

The percentages retained then rise from 98.7, 91.2, 88.9, etc., and become—

*Percentage of  $\frac{7+8+9}{3}$  retained.*

	Percentage		Percentage
10 years old.....	103.0	15 years old.....	47.0
11 years old.....	97.0	16 years old.....	30.0
12 years old.....	97.0	17 years old.....	16.5
13 years old.....	88.0	18 years old.....	8.6
14 years old.....	70.0		

The absurdity of the 103 per cent is probably due to the tendency of the children to state their age as 10 if it is 9 or 11, more often than to state it as 9 if it is 8 or 10, or as 11 if it is 10 or 12, and per-

haps to the late entry to the public schools of a few children. We may properly correct for this, making the percentage of  $\frac{7+8+9}{3}$  retained as follows:

*Corrected percentage of  $\frac{7+8+9}{3}$  retained.*

Percentage.	Percentage.
10 years old..... 100.0	15 years old..... 47.0
11 years old..... 98.0	16 years old..... 30.0
12 years old..... 97.0	17 years old..... 16.5
13 years old..... 88.0	18 years old..... 8.6
14 years old..... 70.0	

These figures represent then as good an approximation to the retention of children in city public schools, such as those listed, as I can get from the data at hand without elaborate hypotheses for correction. It is certainly not far from the truth to say that of pupils entering these city schools one-tenth leave before 13 years of age, one-fourth before 14, one-half before 15, two-thirds before 16, and five-sixths before 17.

The reader will understand that these figures for cities are much too high for the country at large. Even in Connecticut, a State fortunate in its means of education, the corresponding figures<sup>a</sup> are—

Percentage.	Percentage.
10 years old..... 99.5	15 years old..... 32.0
11 years old..... 94.0	16 years old..... 19.0
12 years old..... 94.0	17 years old..... 11.0
13 years old..... 91.0	18 years old..... 6.0
14 years old..... 57.0	

### § 18. *The Variability Among Cities with Respect to Elimination by Age.*

The student who is desirous of a strict account of the variability of cities in respect to elimination by age may, by using the data of Tables 17-19 and such other data as he may secure from city reports, correct each city's school population statistics separately and then compare them. I shall do this only for three high and three low ranking cities and without attempt at perfect precision.

The age population percentages for Cleveland,<sup>b</sup> Jersey City, and Newark schools, as given in Table 18, are—

<sup>a</sup> From the 1903 report of the State Board of Education, pp. 184-185, reduced to per cents of the number of 8-year-olds and corrected by the population statistics of the census of 1900.

<sup>b</sup> Baltimore makes a lower record than Cleveland, but as this may be due in large measure to the colored population it seemed better not to include it.

City	Age.								
	10.	11.	12.	13.	14.	15.	16.	17.	18.
Cleveland.....	Per ct. 93.3	Per ct. 82.3	Per ct. 83.4	Per ct. 73.4	Per ct. 54.0	Per ct. 29.3	Per ct. 16.4	Per ct. 10.1	.....
Jersey City.....	97.0	91.0	89.0	76.2	55.0	33.7	13.0	4.5	2.1
Newark.....	94.0	83.8	80.4	59.7	35.7	18.7	10.4	5.2	2.8
Average <sup>a</sup> .....	94.8	85.7	84.3	60.8	48.2	27.2	13.3	6.6	4.0
Median.....	94.0	83.8	83.4	73.4	54.0	29.3	13.0	5.2	2.8

<sup>a</sup>Approximate.

While those for Denver, Grand Rapids, and Springfield are—

City.	Age.								
	10.	11.	12.	13.	14.	15.	16.	17.	18.
Denver.....	98.7	91.8	90.4	81.8	73.8	50.9	44.1	28.9	18.0
Grand Rapids.....	102.0	95.6	94.2	93.2	85.3	71.9	42.7	21.5	18.0
Springfield.....	91.0	88.9	87.0	85.0	76.3	58.5	39.0	24.1	13.6
Average.....	97.2	92.1	90.5	86.7	78.5	63.4	41.9	24.8	15.4
Median.....	98.7	91.8	90.4	85.0	76.3	59.9	42.7	24.1	14.6

The question is as to how far these extreme individual differences are due to differences in the rate of growth of the cities, and how far they are due to real differences in the educational character of the cities.

The percentages which the number 10 to 14 and the number 15 to 19 are to the number 5 to 9 for those cities are:

City.	Age.		City.	Age.	
	10-14.	15-19.		10-14.	15-19.
Cleveland.....	86.5	89.0	Denver.....	88.4	88.0
Jersey City.....	84.2	83.0	Grand Rapids.....	89.1	90.0
Newark.....	85.4	86.0	Springfield.....	86.1	90.0
Average.....	85.4	86.0	Average.....	87.9	89.3
Median.....	85.4	86.0	Median.....	88.4	90.0

It thus appears that the superiority of the record by age populations of the second group of cities is in a slight degree due to the fact that they have more children 10 to 18 to draw from, approximately 4 per cent more. If the age populations of the former group are multiplied each by 1.04, this disadvantage is removed. The difference thus made is very slight.

It is also true that Newark and Cleveland have flourishing private schools, which take from the public schools more old pupils than they return in exchange, and which eliminate a very small percentage of their pupils compared with the public school per cents. Springfield, Grand Rapids, and Denver do not have private schools of anywhere nearly so great influence on school attendance. Moreover, these latter cities probably gain more from the registration of out-of-town

pupils in the high schools than do Jersey City and Newark. A liberal allowance for all these influences and others except the nature of the pupils and of the school systems themselves will be made by multiplying the figures for the former group by—

	Multi- plier.		Multi- plier.
10 years old.....	1.04	15 years old.....	1.08
11 years old.....	1.04	16 years old.....	1.10
12 years old.....	1.05	17 years old.....	1.18
13 years old.....	1.05	18 years old.....	1.20
14 years old.....	1.06		

We have then the following:

Age.	Average.		Median.	
	Cleve- land, etc.	Denver, etc.	Cleve- land, etc.	Denver, etc.
10 years.....	99	97	98	99
11 years.....	89	92	87	92
12 years.....	89	91	88	90
13 years.....	73	87	77	85
14 years.....	51	79	57	76
15 years.....	29	63	32	60
16 years.....	14.5	42.0	14.3	42.7
17 years.....	7.8	24.8	6.1	24.1
18 years.....	4.8	15.4	3.4	14.6

The cities in the second list, after this allowance, still keep one and a half times as many to the age of 14, twice as many to 15, three times as many to 16, and three and a half times as many to 17 and 18.

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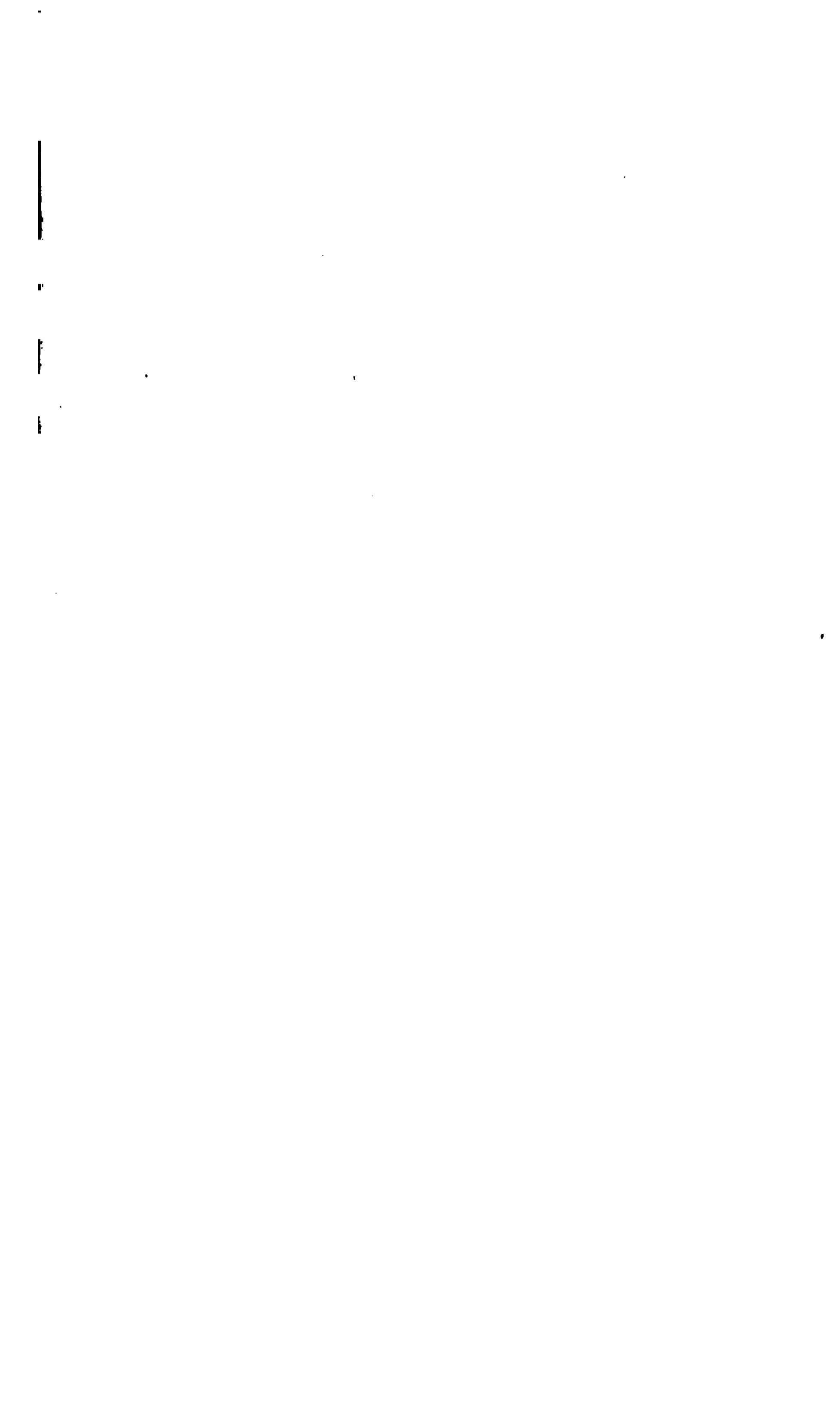
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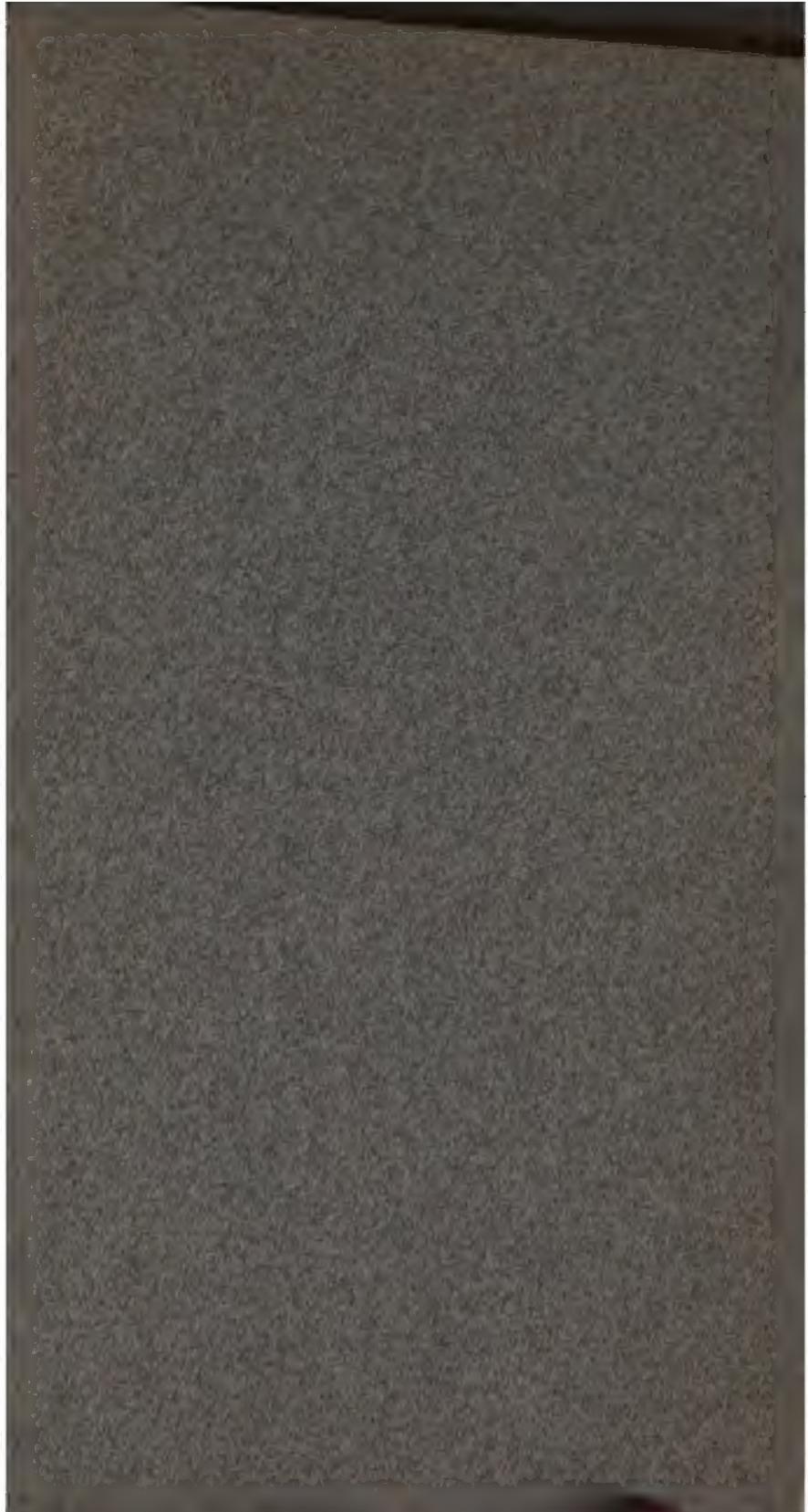
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